SKANDIA

PRODUCTS & SERVICES CATALOG

Skandia, Inc is pleased to offer the following Products & Services:

DAX Foam & Upholstery Supplies

Soundproofing Solutions

Flammability Testing & Certification

Foam Fabrication Programs

Turn-Key Upholstery & Special Programs

5000 North Highway 251, Davis Junction, IL 61020 | 800 945 7135 | www.skandiainc.com

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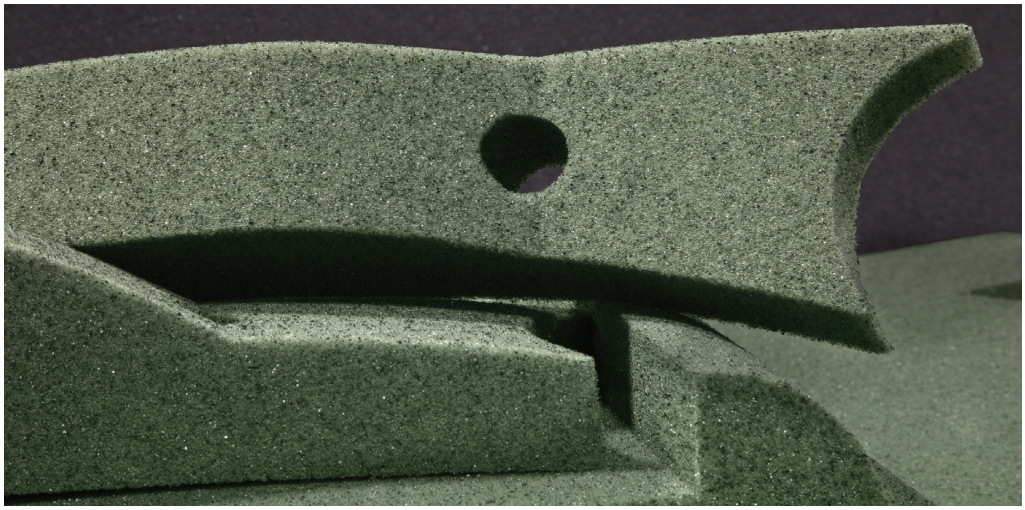
DAX FOAM AND UPHOLSTERY SUPPLIES



All divisions are supported by an in-house team of DERs and DARs that efficiently respond to our diverse customer base including major OEMs, completion and modification centers, as well as corporate and private aircraft owners/operators.

Place Your Order Today — It Ships Today!

INTERIOR + UPHOLSTERY SUPPLIES ARE IN STOCK AND READY TO SHIP
THE SAME DAY YOU PLACE YOUR ORDER

Skandia offers a wide variety of aviation-grade seating foams including DAX firehard foams, HR Poly and Confor. One of our best selling items for headliner and trim panel applications is Aerolite. Aerolite provides superior resistance to compression set while providing acoustic absorption to create a quieter cabin environment.

In addition, Skandia also supplies name brand upholstery supplies. From specialty hardware to tools to batting, we make it convenient and cost-effective to purchase everything you need to refurbish or complete your aircraft.

Contact a Product Sales Representative toll-free at

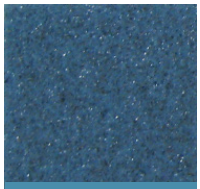
800-945-7135

or shop online at **SkaniaInc.com**

5000 North Highway 251, Davis Junction, IL 61020 | 800 945 7135 | www.skandiainc.com

DAX

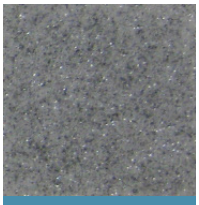
Firehard Foams



DAX 20

DAX 26

DAX 47



DAX 55

DAX 90

DAX 20 with Scrim

DAX Firehard Foams

Comfortable Firehard Foams in Five Densities.

Demonstration of Compliance with Material Flammability Requirements per 14 CFR 25.853(a) Amendment 25-116 Appendix F Part I (a)(1)(ii)

BENEFITS

- In Stock, Can Ship Same Day!
- Custom sizes and fabrication available
- Superior Firehard properties
- Color-coded for ease of identification

SHEET STOCK TOLERANCE SPECIFICATIONS

Width (all) ± 0.30"

Length

≤ 24" ± 0.30"

> 24" ± 0.50"

Thickness

0.125" ± 0.0625"

0.25" ± 0.0625"

0.50 ± 0.0625"

0.75" ± 0.0625"

1.00" < 2.00" ± 0.10"

≥ 2.00" ± 0.20"

Standard shipping of +/- 10-% applies on all rolled goods.

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TECHNICAL DATA SHEET

DAX
Firehard Foams

	DAX 20	DAX 26	DAX 47	DAX 55	DAX 90
DENSITY (pcf)	3.20 ± 0.20	3.10 ± 0.30	3.20 ± 0.20	3.20 ± 0.20	5.0 ± 0.50
ILD (lbs) (Indentation Load Deflection on 4" Thickness)					
25%	15-25	20-30	40-50	50-60	80-100
Support Factor 65/25	2.4 min	2.4 min	2.4 min	2.4 min	2.4 min
***RESILIENCE** (% Rebound)	36-60	57-63	54-62	54-62	35-45
TEAR RESISTANCE (lb/in)	1.0-2.0	1.0-2.0	1.0-2.0	1.0-2.0	1.0-2.0
***STATIC FATIGUE** Test Method ASTM D3574-81 Procedure A (75% Deflection, 22 hrs.)					
% Loss in 25% ILD	Less than 25				
% Loss in Thickness	Less than 5				
DYNAMIC FATIGUE BY CONSTANT FORCE POUNDING ASTM D3574 (80,000 cycles - final measurement 24 hours after test completed)					
% Loss at 40% ILD	Less than 15				
FLAMMABILITY California Technical Bulletin 117	Pass				
14 CFR 25.853(a) Amendment 25-116 Appendix F Part I (a)(1)(ii) 12-Second Vertical	Pass				
****14 CFR 25.853(c)** Appendix F Part II Oil Burn Test	Pass				
SMOKE AND TOXICITY Airbus Industrie ATS 1000.001/ABD 0031	Pass				

***DOES NOT APPLY TO DAX SP FOAMS.**

****WHEN CONSTRUCTED USING APPROVED COVERING MATERIALS.**

Standard shipping of +/- 10-% applies on all rolled goods.

SKANDIA

DAX VXS

Visco-Elastic Firehard Foam

DAX VXS Visco-Elastic Foam

Typical properties for DAX-VX (visco-elastic foam)	VXS
Density (lb/ft$^{3)}$	2.9 - 3.5
ILD on 4"Thickness (25%)	8 - 15
Resilience (% Rebound) (%)	8 - 16
Tear Resistance (lbs/in.)	1.0 - 2.0
Color	Light Gray/Green
Flammability	
California TB 117	Pass
FMVSS-302	Pass
FAA 25.853 (a)	Pass
FAA 25.853 (c)	Pass
NBS Smoke Density (ASTM E-662)	Pass
Toxicity (ATS1000/ADB0031)	Pass

BENEFITS

- In Stock, Can Ship Same Day!
- 25-50% Lighter than other Visco-Elastic Foam
- Meets 25.853 (a) & (c) Flammability requirements
- Increases Comfort by Reducing Pressure Points
- Available Thicknesses: 0.25", 0.50", 1.00", & 2.00"
- Available in Soft (VXS) version only

SKANDIA

Standard shipping of +/- 10-% applies on all rolled goods.

DAX SP with Jersey Scrim

DAX SP with Jersey Scrim

When sewn into the dress cover, seats appear smooth and wrinkle-free.

Decorative quilting and other techniques are especially user-friendly due to its ability to stretch.

BENEFITS

- Enables easy dress cover application
- Has shown to improve flammability performance
- Superior Firehard properties
- Retains comfort and durability characteristics

SKANDIA

TECHNICAL DATA SHEET

DAX SP with Jersey Scrim

DAX SP with Jersey Scrim

FOAM	DAX 20SP w/JSCRIM	DAX 20SP w/JSCRIM	DAX 26SP w/JSCRIM	DAX 26SP w/JSCRIM	DAX 47SP w/JSCRIM	DAX 47SP w/JSCRIM	DAX 55SP w/JSCRIM	DAX 55SP w/JSCRIM
WEIGHT (oz/yd^2)	18.3	30.5	17.8	25.5	19.0	29.8	18.2	32.5
THICKNESS	.25"	.50"	.25"	.50"	.25"	.50"	.25"	.50"
ILD (Indentation Load Deflection on 4" Thickness) 25%	15-25	15-25	20-30	20-30	40-50	40-50	50-60	50-60
Support Factor 65/25	4.0 min	4.0 min	2.7 min	2.7 min	2.5 min	2.5 min	2.6 min	3.7 min
FLAMMABILITY								
California Technical Bulletin 117	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
14 CFR 25.853(a) 12-Second Vert	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
14 CFR 25.853(c) Oil Burn Test*	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

JERSEY SCRIM

YARN COMPOSITION	Polyester
FABRIC WEIGHT	9.83 oly / 5.28 osy / 178.9 gsm
THICKNESS	0.024"
RESISTANCE	120,000 dry rubs

***WHEN CONSTRUCTED USING APPROVED COVERING MATERIALS.**

DAX Foam with FireGuard Jersey Scrim

DAX Foam with FireGuard Jersey Scrim

DAX Foam with FireGuard Jersey Scrim gives passengers all the quality and comfort they expect from Skandia but now with VASTLY SUPERIOR fire protection.

When sewn into the dress cover, seats appear smooth and wrinkle-free.

Decorative quilting and other techniques are especially user-friendly due to its ability to stretch.

BENEFITS

- Vastly superior fire resistance
- Vastly superior comfort
- Four-way stretch fire protective fabric
- Laminated materials means reduced material processing
- Maximum Durability

SKANDIA

TECHNICAL DATA SHEET

DAX Foam with FireGuard Jersey Scrim

DAX Foam with FireGuard Jersey Scrim

FOAM	DAX 20SP w/FGSCRIM	DAX 20SP w/FGSCRIM	DAX 26SP w/FGSCRIM	DAX 26SP w/FGSCRIM	DAX 47SP w/FGSCRIM	DAX 47SP w/FGSCRIM	DAX 55SP w/FGSCRIM	DAX 55SP w/FGSCRIM
WEIGHT (oz/yd^2)	17.9	30.0	17.4	25.0	18.6	29.4	17.8	32.0
THICKNESS	.25"	.50"	.25"	.50"	.25"	.50"	.25"	.50"
ILD (Indentation Load Deflection on 4" Thickness) 25%	15-25	15-25	20-30	20-30	40-50	40-50	50-60	50-60
Support Factor 65/25	4.0 min	4.0 min	2.7 min	2.7 min	2.5 min	2.5 min	2.6 min	3.7 min
FLAMMABILITY								
California Technical Bulletin 117	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
14 CFR 25.853(a) 12-Second Vert	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
14 CFR 25.853(c) Oil Burn Test*	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

FIREGUARD

YARN COMPOSITION	Proprietary blend of high-performance fibers
FABRIC WEIGHT	6.04 oz/sq yd
THICKNESS	0.054"

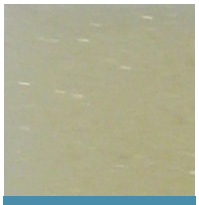
***WHEN CONSTRUCTED USING APPROVED COVERING MATERIALS.**

HR Polyfoam


HR 14


HR 23


HR 30


HR 46


HR 55


HR 70


HR 150

HR Polyfoam

Comfortable HR Foams in seven levels of firmness.

Demonstration of Compliance with Material Flammability Requirements per 14 CFR 25.853(a) Amendment 25-116 Appendix F Part I (a)(1)(ii)

BENEFITS

- In Stock, Can Ship Same Day!
- Wide variety of densities
- Custom sizes and fabrication available

SKANDIA

Standard shipping of +/- 10-% applies on all rolled goods.

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TECHNICAL DATA SHEET

HR Polyfoam

	HR 14	HR 23	HR 30	HR 46	HR 55	HR 70	HR 150	HR 150SP
DENSITY (pcf)	1.80 +/– 0.10	1.80 +/– 0.05	2.60 +/– 0.10	2.00 +/– 0.10	2.80 +/– 0.10	3.20 +/– 0.20	4.60 +/– 0.30	6.92 +/– 0.30
ILD (Indentation Load Deflection on 4" Thickness)								
25%	15–18	20–22	32–38	40–48	51–59	69–79	130–170	130–170
65%	39-47	48–62	65–86	105–120	120–156	165-190		
SUPPORT FACTOR	2.6	2.6	2.6	2.6	2.4	2.4	2.4	2.4
RESILIENCE (% Rebound)	59-66	59-66	59-66	50-60	57-63	50-60	50–60	50–60
TEAR RESISTANCE (in.)	1.0-2.0	1.0-2.0	1.0-2.0	1.0-2.0	1.0-2.0	1.0-2.0	1.0–2.0	1.0–2.0
TENSILE STRENGTH (psi)	>10	11	15	15	15	15	15	15
ULTIMATE ELONGATION %	>150	140	100	100	100	100	100	100
COMPRESSION SET % MAX								
90% 22 hrs @ 157°F	<10	10	10	10	10	10	10	10
FLAMMABILITY								
California Tech. Bulletin 117	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
14 CFR 25.853(a) Appendix F Part I (a)(1)(ii) 12-Second Vertical	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Standard shipping of +/- 10-% applies on all rolled goods.

SKANDIA

AeroLite

Resistant to Compression Set

Excellent Absorption

Introducing AL76 - The environmentally-friendly replacement for AL75*

AL76 shares the same physical properties that the industry has come to enjoy. Now it is more environmentally-friendly.

AeroLite Foams AL 70 • AL 73 • AL 76

AeroLite cellular foams are excellent for headliner and trim panel applications and also provide acoustic absorption. They combine superior compression set resistance at a variety of firmness while creating a quieter cabin environment.

Available in 0.125" and 0.25" thickness

BENEFITS

- Highly Resistant to Compression Set
- Excellent Acoustical Performance
- Color-coded to identify firmness
- Soft, Medium, and Firm Grades
- Sandable

SKANDIA

SKANDIA

TECHNICAL DATA SHEET

AeroLite

Headliners • Sidewalls

Bulkheads • Seat Shrouds • Carpet Pad

AL 70 • AL 73 • AL 76

Typical Physical Properties	AL70	AL73	AL76
Roll Sizes	54" x 25'	54" x 25'	54" x 25'
	54" x 50'	54" x 50'	54" x 50'
Thickness	.125 in, 0.25 in	.125 in, 0.25 in	.125 in, 0.25 in
Color	Charcoal	Beige	Light Grey
Feel/touch	Soft	Medium	Firm
25% Compression Deflection			
Force (psi) ASTM D1056	3.9	5.5	11.8
**50% Compression Set			
(%) ASTM D1056	4.9	9.3	15.1
Density (pcf) ASTM D1056	8.8 ± 1.0	9.5 ± 1.0	9.4 ± 1.0
Tensile (psi) ASTM D3574	59.1	70.1	98.0
Elongation (%) ASTM D3574	105	95	70
Flammability			
14 CFR 25.853(a) 12-Sec Vert	Passes	Passes	Passes

PLEASE READ PRIOR TO INSTALLATION

AeroLite

Excellent Acoustic Absorption at High Frequency

Good Sandable Qualities

Excellent Resistance to Compression Set

The open cell structure of AeroLite provides

EXCELLENT RESISTANCE TO COMPRESSION SET

Please use care when installing as AeroLite

IS MORE SUSCEPTIBLE TO TEARING THAN ENSOLITES.

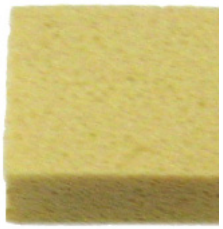
Please contact Skandia if you have any questions and we will be happy to assist you.

Skandia, Inc. • 800.945.7135 • 815.393.4600 • Info@SkandiaInc.com

SKANDIA

Ensolite

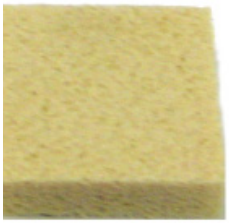
Closed Cell Foams



ALC

SKIV1

SKAHC



SKAPC

SKIV3

SK-F6231

R-310V REPLACEMENT

MC

MLC

LD45FR

DOES NOT PASS:

ALC.06
SKIV1.06
SKIV3.06
SKIV3.125
SKAHC.06
SKAHC.125
SKAHC.25
SKF6231.125

Ensolite

CLOSED CELL FOAMS

- Typical Uses Include:
  Headliner, Sidewall, Carpet Pad, Armrest
- Stock Sizes include: 1/8" • 1/4" • 1/2"
- Additional Sizes Upon Request

BENEFITS

- Radiant Panel Certified
- Excellent Performance to Weight Ratio
- In stock, ships same day!

SKANDIA

Standard shipping of +/- 10-% applies on all rolled goods.

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TECHNICAL DATA SHEET

Ensolite

Closed Cell Foams

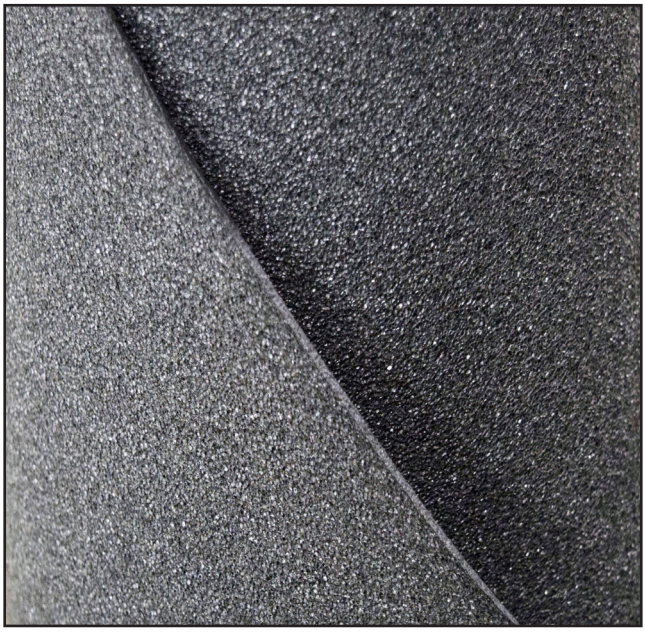
STYLE	ALC	SKAPC	MC	SKIV1	SKIV3	MLC	SKAHC	SK-F6231	LD45FR
Roll Size	56" x 75'	56" x 75'	56" x 25'	54" x 25'	54" x 25'	56" x 10'	56" x 48'	42" x 54"	40" x 80"
Thicknesses	.06" *	.125"	.125"	.06" *	.06" *	.125	.06" *	.06" *	.125"
	.125"	.25"	.25"	.125"	.125" *	.25"	.125" *	.125" *	.25"
	.25"	.50"	.50"	.25"	.25" **	.40"	.25" *	.25"	.50"
	.50"			.375"	.375"		1.00"	.50"	1.00"
				.50"	.50"			.75"	
				1.00"	.75"			1.00"	
					1.00"				
Color	Beige	Beige	Beige	Black	Black	Black	Light Grey	Beige	Charcoal
25% Compression Deflection Force (psi) ASTM D1056	4.0–6.0	4.0–6.0	1.5–3.0	2.0–5.0	9.0–13.0	2.0–3.5	7.0–9.0	4.0–8.0	2.0–5.0
†50% Compression Set (%) ASTM D1056	**25**	**40**	**30**	**40**	**40**	**30**	**30**	**25**	**11**
Density (pcf)	6.0–8.5	4.0–5.5	3.5–5.0	3.0–5.5	7.0–9.5	3.5–5.0	6.5–8.5	5.0–9.0	2.8
Tensile (psi)	90	50	30	50	100	30	90	80	82
Elongation (%)	125	100	125	100	100	150	100	200	150
FLAMMABILITY									
14 CFR 25.853(a) 12-Second Vertical	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
MVSS302	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

* DOES NOT PASS FLAMMABIILITY REQUIREMENTS. ** PASSES 14 CFR 23.853(a) HORIZONTAL ONLY.

† NOTE: THE LOWER THE NUMBER, THE HIGHER THE RESISTANCE TO COMPRESSION SET. FOR BETTER PERFORMANCE, COMPARE TO SKANDIA'S AEROLITE PRODUCT LINE.

SK-OSU

Closed Cell Heat Release Foam



SK-OSU Closed Cell Foam

Typical Physical Properties		
Roll Size		54" x 20 ft
Thicknesses		.125", .25"
Color		Black
Water Absorption (%)	ASTM D1056	10
25% Compression Deflection Force (psi)	ASTM D1056	2.0—5.0
Density (pcf)	ASTM D1056	3.0—6.0
Tensile (psi)	ASTM D412	40
Elongation (%)	ASTM D412	100
Flammability		
12 Second Vertical 14 CFR 25.853(a)		Pass
Smoke density 14 CFR 25.853(d)		Pass
Heat Release 14 CFR 25.853(d)		Pass
FMVSS-302		Pass
UL94 HF-1		Listed
UL94 V0, 5VA		Listed

SKANDIA

AeroCell Foam

High Performance Absorption and Insulation, Radiant Panel Certified

AeroCell Foam SK-13000 • SK-13200 • SK-13200PSA

AeroCell is a very lightweight, open cell melamine foam which has exceptional sound absorption properties. AeroCell exhibits very good thermal properties and contains no fibers.

AeroCell is provided in sheets in a variety of thicknesses. This foam can also be custom cut to suit specific acoustical or thermal requirements.

BENEFITS

- Radiant Panel Certified
- Excellent High Frequency Sound Absorption
- Lightweight
- Excellent Thermal Insulation Properties
- OSU Certified (SK-13000 only)
- Water-Repellent (SK-13200 series only)
- Can be Used to Reduce Weight in Seats

SKANDIA

SKANDIA

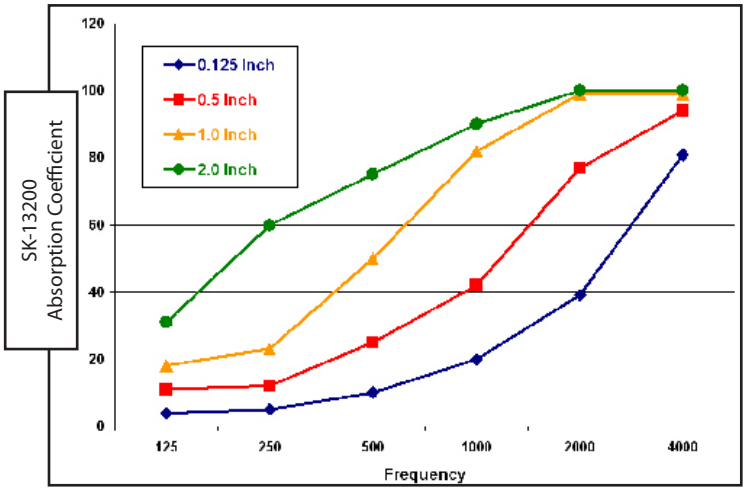
TECHNICAL DATA SHEET

AeroCell Foam

High Performance Absorption and Insulation, Radiant Panel Certified

SK-13000 • SK-13200 • SK-13200PSA Open Cell Foam

Typical Physical Properties	SK-13000	SK-13200	SK-13200PSA*
Density ASTM D3574	0.62 pcf	0.63 pcf	0.63 pcf
Sheet Size	24" x 48"	23" x 46"	23" x 46"
Thickness	0.125", 0.25"	0.25"	0.25"
	0.375", 0.50"	0.50"	0.50"
	0.75", 1.00"	1.00"	
	1.50", 2.00"	2.00"	
Color	Grey	Grey	Grey
Flammability			
14 CFR 25.853(a) 12-Second Vertical	Passes	Passes	Passes
14 CFR 25.853(a) 60-Second Vertical	Passes	Passes	Passes
14 CFR 25.853(d) OSU	Passes	----------	----------
14 CFR 25.856(a) Radiant Panel	Passes	Passes	Passes
Thermal Conductivity ASTM C518	.30 BTU in/hr/ft²/°F@77°F	.23 BTU in/hr/ft²/°F@50°F	.26 BTU in/hr/ft²/°F@75°F
Tensile Strength ASTM D3574	8 psi	15 psi	15 psi
Elongation ASTM D3574	8%	39% nominal	39% nominal
Water Repellency	----------	35% average weight gain, max	35% average weight gain, max
Additional Tests			
Boeing DSS 9739, Toxic Gas Generation	Passes	Passes	Passes
UL181, Microbial Growth	Passes	----------	----------
TM G21, Fungus Resistance	Passes	----------	----------



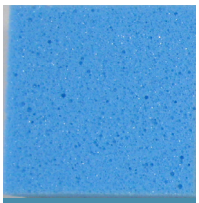
*AeroCell Foam with PSA must be tested in composite to meet flammability certification requirements.

SKANDIA

Confor Foam

Comfort/Impact Foams

CF-40AC



CF-45AC

CF-42AC

CF-47AC

SHEET STOCK TOLERANCE SPECIFICATIONS

Width (all) ± 0.30"

Length

≤ 24" ± 0.30"

> 24" ± 0.50"

Thickness

0.125", 0.25", 0.50", & 0.75" ± 0.0625"

1.00" < 2.00" ± 0.10" ≥ 2.00" ± 0.20"

CONFOR Foam

With excellent energy absorption characteristics, Confor® foams offer a range of impact protection and isolation for dynamic loads while maintaining consistent static load performance.

Confor foams unique combination of slow recovery and high energy absorption allows the material to offer effective damping and vibration isolation. This means less fatigue for occupational seating and increased comfort.

BENEFITS

- In Stock, Can Ship Same Day!
- Excellent Energy Absorption
- Superior Comfort
- Color-coded for ease of identification

SKANDIA

Standard shipping of +/- 10-% applies on all rolled goods.

SKANDIA

TECHNICAL DATA SHEET

Confor Foam

Comfort/Impact Foams

PROPERTIES	TEST METHOD	CF-47AC GREEN	CF-45AC BLUE	CF-42AC PINK	CF-40AC YELLOW
Density Nominal (lb/ft^3)	ASTM D3574	96 (6.0)	96 (6.0)	96 (6.0)	96 (6.0)
Flammability	FMVSS 302 14 CFR 25.853(a) Appendix F Part I(a)(1)(ii)(12 sec) UL94 RATING @ (min 0.25 in) California Flame 117 RoHS Compliant	Meets Meets Meets Listed HBF Yes	Meets Meets Meets Listed HBF Yes	Meets Meets Meets Listed HBF Yes	Meets Meets Meets Listed HBF Yes
Ball Rebound (%)	ASTM D3574	2.2	1.9	1.3	1
Thermal Conductivity, - K Value	ASTM C177 W/m*K (BTU-in/hr-ft^2 F)	0.040 (0.28)	0.040 (0.28)	0.040 (0.28)	0.040 (0.28)
Indentation Force Deflection	ASTM D3574 Test B1 Modified 25% Deflection for 12"x12"x2" 22C (72F) @ 50% Relative Humidity N (lbf)	280 (63)	213 (48)	155 (35)	97 (22)
Compression Load Deflection	ASTM D 3574C *Modified *12.7mm thick specimen compressed at a rate of 5.1 mm/min				
Force @ 10% Compression kPa (psi)		4.8 (0.69)	3.9 (0.57)	2.2 (0.31)	1.5 (0.21)
Force @ 20% Compression kPa (psi)		6.9 (1.0)	5.0 (0.72)	2.9 (0.42)	2.0 (0.28)
Force @ 30% Compression kPa (psi)		7.2 (1.0)	5.3 (0.76)	3.2 (0.47)	2.3 (0.33)
Force @ 40% Compression kPa (psi)		7.9 (1.1)	5.9 (0.85)	3.7 (0.54)	2.6 (0.38)
Force @ 50% Compression kPa (psi)		9.3 (1.3)	7.0 (1.0)	4.4 (0.64)	3.2 (0.47)
Force @ 60% Compression kPa (psi)		12 (1.7)	9.1 (1.3)	5.9 (0.85)	4.4 (0.63)
Force @ 70% Compression kPa (psi)		20 (2.8)	15 (2.1)	9.8 (1.4)	7.5 (1.1)
Force @ 80% Compression kPa (psi)		49 (7.1)	36 (5.3)	25 (3.6)	20 (2.9)
Tensile Strength kPa (psi)	ASTM D3574, @ 20 in/min 72F	193 (28)	145 (21)	83 (12)	51 (7.4)
Tear Strength kN/m (lbf/in)	ASTM D3574, 51 cm/min (20 in/min) @ 22C (72F) ASTM D3574	0.98 (5.6)	0.73 (4.2)	0.45 (2.6)	0.29 (1.7)
Compression Set (%)	Compressed 50% 22 hr at 22C (72F)	<1	<1	<1	<1

SKANDIA

TECHNICAL DATA SHEET

EthaFoam

PolyEthylene Foam

ETHAFOAM PolyEthylene Foam

Highly Buoyant; Used in Flotation Cushions

Lightweight, Strong, Resilient, and Durable

Ideally Suited as Component Material

Typical Physical Properties	ETHA41012.0
Density ASTM D3575	2.2 pcf
Sheet Size	2" x 24" x 36"
Compression Set ASTM D3575	<20%
Compression Deflection ASTM D3575	
@10%	8 psi
@25%	10 psi
@50%	20 psi
Tensile Strength ASTM D3575	35 psi
Tensile Elongation ASTM D3575	60%
Tear Strength ASTM D3575	10 lbs/in
Thermal Stability ASTM D3575	<1%
Thermal Conductivity ASTM D3575	BTU•in/hr•ft^2•°F
@75%°F	0.42
@23%°F	0.37
Water Absorption ASTM D3575	0.3 lbs/ft^2
Buoyancy ASTM D3575	58 pcf
Flammability	
14 CFR 25.853(a) 12-Second Vertical	Passes
ABD 031	Passes

Standard shipping of +/- 10-% applies on all rolled goods.

TECHNICAL DATA SHEET

Hook & Loop

Radiant Panel Certified*

SRPBGE1.00H + SRPBGE1.00L + SRPBGE2.00H + SRPBGE2.00L

Sew-On Hook & Loop Fastener

Benefits The sew-on Hook & Loop fastener can be used for quick attach/detach applications that require compliance with the Radiant Panel Certification test for thermal/acoustic insulation. Its improved fire-retardancy helps to reduce the risk of failure in oil burn test results for Part 25 seat cushions.

Typical Physical Properties	
Roll Sizes	1" x 50 yards, 2" x 50 yards
Color	Beige
Flammability	
14 CFR 25.853(a) 12-Second Vertical	Passes
14 CFR 25.856(a) Radiant Panel	Passes*
BMS 8-372	Passes
FMVSS-302	Passes

Typical Shear Value	Initial	After 100 Cycles
In pounds per square inch	10.6	8.1

Typical Peel Value	Initial	After 100 Cycles
In pounds per inch width	1.1	0.8

Typical Tension Strength	Initial	After 100 Cycles
In pounds per inch width	7.3	4.6

*When tested with other Radiant Panel compliant materials per FAA Advisory Circular AC-25.856-1 paragraph 5C.

HOOK & LOOP

Hook & Loop Fasteners

TYPICAL SHEAR VALUES	INITIAL	AFTER 15000 CYCLES
Pounds per Square Inch	12.0 lbs.	10.0 lbs.

TYPICAL PEEL VALUES	INITIAL	AFTER 5000 CYCLES
Pounds per Square Inch	1.4 lbs.	1.1 lbs.

CERTIFICATIONS

All prices include demonstration of compliance with material flammability requirements per 14 CFR 25.853(a) 12-Second Vertical. Also passes MIL-Spec AA55126A and FMVSS 302. Meets BMS-8-372

SKANDIA

SKANDIA

TECHNICAL DATA SHEET

HOOK & LOOP

High Performance Barrier w/Light-weight, Low Density Fiber Blanket
Radiant Panel Certified

HOOK & LOOP FASTENERS

SEW-ON HOOK & LOOP Beige or Black, 50 Yard Rolls

BEIGE: HOOK / LOOP ITEM #	BLACK: HOOK / LOOP ITEM #	SIZE
SABGE1.00H / SABGE1.00L	SABLK1.00H / SABLK1.00L	1″
SABGE2.00H / SABGE2.00L	SABLK2.00H / SABLK2.00L	2″

	Weight oz/yd^2	Density lbs/ft^3		Weight oz/yd^2	Density lbs/ft^3
1" HOOK	7.99	7.901	1" LOOP	9.47	7.216
2" HOOK	8.96	9.028	2" LOOP	9.88	7.672

PSA HOOK & LOOP Beige or Black, 25 Yard Rolls

BEIGE: HOOK / LOOP ITEM #	BLACK: HOOK / LOOP ITEM #	SIZE
PBGE1.00H / PBGE1.00L	PBLK1.00H / PBLK1.00L	1″
PBGE2.00H / PBGE2.00L	PBLK2.00H / PBLK2.00L	2″

MUSHROOM HEAD HOOK Black, 50 Yard Rolls, Sew Only with Scrim Backing (self-adhesive not available), Fastens to any other Skandia Loop, Passes 14 CFR 25.853(a) 12-Second Vertical

ITEM #	TYPE	SIZE	OVERALL WIDTH
BLK1.0 MUSHRM	SEW	1"	2"
BLK1.5 MUSHRM	SEW	1.50"	3"

HOOK & LOOP XTRA WITH SCRIM BACK FASTENER

XTRA Wide, XTRA Surface Area, XTRA Secure Bond, Works with Contact Adhesive, works where PSA does not, Beige, 50 Yard Rolls, Sew Only

ITEM #	TYPE	SIZE	OVERALL WIDTH
BGE1.00HS	HOOK	1"	2"
BGE1.00LS	LOOP	1"	2"
BGE2.00HS	HOOK	2"	3"
BGE2.00LS	LOOP	2"	3"

SKANDIA

SKANDIA

TECHNICAL DATA SHEET

Hook & Loop

Low Profile Carpet Retention System

LPP1.00H + LPP1.00L

Pressure Sensitive Adhesive Hook & Loop Fastener

Low Profile

The only system that eliminates the appearance of hook and loop

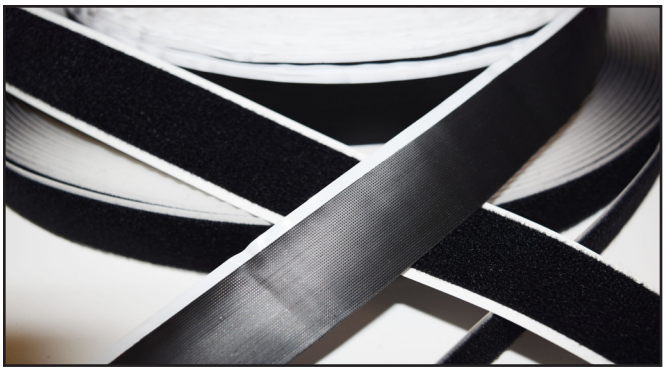
Incredible Shear Performance

Four times stronger than current retention systems

Fire Retardant

Meets 25.853(a) flammability requirements

Typical Physical Properties		
Width	1"	
Color	Black	
Flammability		
14 CFR 25.853(a) 12-Second Vertical	Passes	
FMVSS-302	Passes	
Typical Shear Value	**Initial**	**After 100 Cycles**
In pounds per square inch	45	12
Typical Peel Value	**Initial**	**After 100 Cycles**
In pounds per inch width	3.2	1.2
Typical Tension Strength	**Initial**	**After 100 Cycles**
In pounds per inch width	7.5	3.2
PSA Properties		
Temperature Range	–22° to 140°F (–30° to 60°C)	
Shelf Life	One year from manufacturing date, when stored in original packaging at 70°F(21°C), 50% relative humidity.	



SKANDIA

Guardian

Upholstery Batting

Guardian Batting

Skandia's unique manufacturing process means that fibers are interlocked to provide flawless, consistent performance

Improved fire-retardancy in Oil Burn Testing

So advanced it can be certified to 14 CFR 25.856(a) Radiant Panel

PHYSICAL SPECIFICATIONS

WIDTH	40 in.
LENGTH	20 yards
WEIGHT	8 oz/yd^2
THICKNESS	.375 in. loft
COLOR	Charcoal

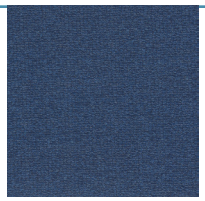
BENEFITS

- In Stock, Can Ship Same Day!
- Unequaled fireblock performance
- Enhanced seating comfort

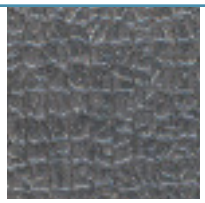
Standard shipping of +/- 10-% applies on all rolled goods.

SKANDIA

Blue Marble



Grey Marble



Durug

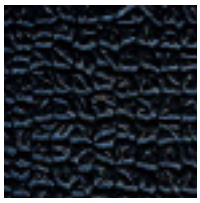
Air Stair Flooring

Tan Marble

Grey

Tan

Black



ITEM #	COLOR
2277/2499/2486	Blue Marble
2277/0918/0972	Grey Marble
2277/5227/5224	Tan Marble
2265/9801	Black
2265/2983	Grey
2265/2273	Tan

Durug Air Stair Flooring

DURUG is an excellent flooring choice for air stairs, entryways, galleys and wet areas. It meets 14 CFR 25.853 flammability requirements and is available in six popular colors, 54" x 1 linear yard (minimum order). For added comfort, it may be glued to Skandia closed cell foam, SK-F6231.

In addition, DURUG is available by special order with foam backing that also meets various Boeing and Lockheed Martin specifications.

BENEFITS

- In Stock, Can Ship Same Day!
- Anti-Slip / Anti-Skid
- Resists scuffs and abrasion
- Resists moisture, mildew, grease and chemicals

SKANDIA

Standard shipping of +/- 10-% applies on all rolled goods.

SKANDIA

Making Aircraft Quieter, Safer, and More Comfortable

Standard shipping of +/- 10-% applies on all rolled goods.

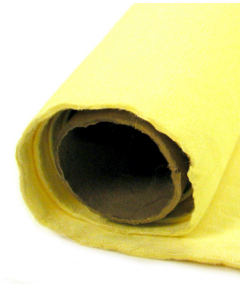
Don't forget to order Kevlar thread--see page 5!

FIREBLOCKING FABRICS

SOUTHERN MILLS S/757NW

Aramid Batt With Aramid Scrim
Item # SM-S757NW

- Aircraft industry standard fireblocking fabric for full encapsulation of polyfoam cushions to meet 14 CFR 25.853 fireblocking requirements
- Non-woven needled Aramid batt with Aramid scrim
- Weight = 8.5 oz./sq. yd.
- Thickness = 0.104—0.138"
- Width = 60"
- Passes 14 CFR 25.853(a) 12-Second Vertical
- Free of Formaldehyde and Formaldehyde-based fibers
- 50 Yard Rolls



TEX TECH 4759R

6.9 oz. PBI, Basofil, Aramid with Scrim
Item # TT-4759R

- Aircraft industry standard fireblocking fabric for full encapsulation of polyfoam cushions to meet 14 CFR 25.853 fireblocking requirements
- Basofil - 38%, Aramid - 52%, PBI - 10%
- Weight = 6.4—7.4 oz./sq. yd.
- Thickness = 0.048—0.068"
- Width = 60"
- Supported Construction
- Passes 14 CFR 25.853(a) 12-Second Vertical
- Scrim—100% Nomex fiber content
- 50 Yard Rolls

FIRE-RESISTANT FABRICS*

***Thermablock and FlameStop are not recommended for full encapsulation of polyfoam cushions to meet aircraft fireblocking requirements.**

THERMABLOCK

DuPont Kevlar
Item # DU-Z-11

- Fire-resistant yellow spun-laced sheet
- 100% Kevlar
- Weight = 2.0 oz./sq. yd.
- Thickness = 0.015"
- Width = 56"
- Passes 14 CFR 25.853(a) 12-Second Vertical
- Compliant with CAL 133
- Sold by the yard or in 50 yard rolls

FLAMESTOP

Nomex Fabric
Item # FS-5646-2200

- FlameStop is a flexible flame barrier used underneath marginally performing dress cover materials. Its unique knitted construction with two-way stretch allows it to be glued directly to the foam without compromising cushion comfort.
- 100% Nomex
- Weight = 6.0 oz./sq. yd.
- Width = 34" when laid flat; 68" to 70" in circumference;
  NOTE: this material stretches and can extend up to 8% in length, 20% in width
- Passes 14 CFR 25.853(a) 12-Second Vertical
- Sold by the yard

MUSLIN

Item # MUS

- 3.6 oz. Fire-Resistant Muslin
- 40" width x linear yard
- Lightweight, durable 100% cotton fabric
- Manufactured to meet CAL 117 and 14 CFR 25.853(a) 12-second Vertical

Standard shipping of +/- 10-% applies on all rolled goods.

CANVAS

Item # Canvas/Natural

- 7 oz. Fire-Resistant Canvas
- 62" width x yard
- Aircraft Grade
- Self-Extinguishing
- Excellent as a bottom cushion close-out in fire blocking applications
- Passes 14 CFR 25.853(a) 12-Second Vertical
- Color: Natural

PACK CLOTH

Item # SK-400D/1

- 5.1 oz./sq. yd.
- 60" width x yard
- 100% nylon, 400 denier
- Passes 14 CFR 25.853(a) 12-second Vertical
- Color: Beige

ETHAFOAM®, DOW 4101

Item # ETHA41012.0

- Highly buoyant; used in flotation cushions
- Lightweight, Strong, Resilient, and Durable
- Ideally Suited as Component Material
- Passes 14 CFR 25.853(a) 12-Second Vertical
- Sheet Size: 2" x 24" x 36"

Great for reshaping arms and backrests

NAUGAHYDE® VINYL

Spirit Millennium Line

Ordering Requirements:

- 5-yard minimum on all orders
- 30-yard minimum order on non-stock colors
- Contact us for availability

- 54" Roll Width
- Superior Tear Strength
- Advanced BeautyGard Protective Finish
- Contemporary High Styled Surfaces
- Environmentally Friendly Materials
- Mildew Resistant
- Made in the USA

Naugahyde Spirit Millennium line meets these flammability test requirements:

- Passes 14 CFR 25.853(a) 12-Second Vertical
- California Fire Regulation (Bulletin 117 Sec. E)
- Automotive (MVSS-302)
- BIFMA Class I
- Boston Fire Code (BFD IX-1)
- Fed. Spec CID A-A-2950-A
- Port Authority of NY and NJ

WEBBING

Item # BR-8962*

- Great for cargo straps, backpacks, luggage, and unlimited Applications for restraining and reinforcements
- COML-SPEC-MIL-W-4088K Type II Class 1
- Nylon
- Passes 14 CFR 25.853(a) Horizontal
- 1" wide x 100 Yard Roll

Standard shipping of +/- 10-% applies on all rolled goods.

ELASTIC

Item # ELASTIC 1"

- 1" wide
- Passes 14 CFR 23.853(a) Horizontal

POLYKEN TAPES

DOUBLE-SIDED

- Conformability - Accommodates Irregular Surfaces
- Tearability - Ease of Installation
- High Quick Stick - Immediate Carpet Bond
- High Adhesion - Retains Bond Integrity
- Passes 14 CFR 25.853(a) 12-Second Vertical Burn†

P-108-2-N

ITEM #	DESCRIPTION	SIZE
P-108-2-N†	Fire-Retardant Tape	2" x 25 yard roll

SEAMING

- Flame retardant polyethylene coated waterproof tape
- Exceptionally aggressive adhesive to a variety of substrates
- Exhibits outstanding handling characteristics and conforms well to duct systems
- Passes 14 CFR 25.853(a) 12-Second Vertical Burn

P-225-3 FR

ITEM #	DESCRIPTION	SIZE
P-225-3 FR	Fire-Retardant Tape	3" x 60 yard roll

Standard shipping of +/- 10-% applies on all rolled goods.

FOAM RUBBER CUTTER

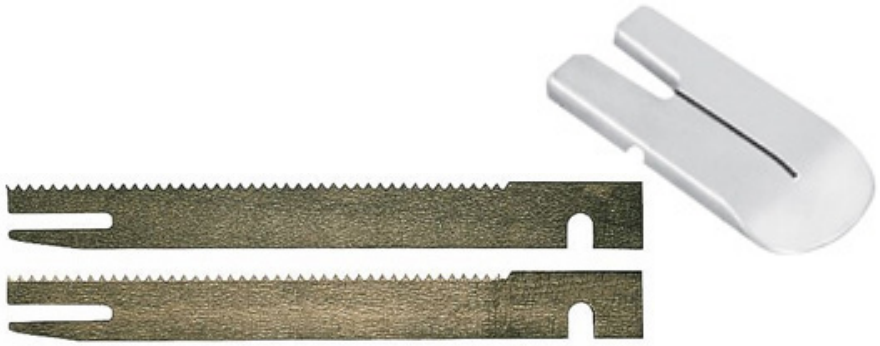
- Versatile - will cut all types of foam and carpeting
- Quick blade change, no tools required
- Long, paddle-type switch and slim motor housing are easy to grip

KITS

ITEM #	DESCRIPTION
SB-1575KIT-12	12" Foam Rubber Cutter Kit
Includes 12" Blade Pair, 12" Guide, Rubber Cutter, and Foot Plate	
SB-1575KIT-8	8" Foam Rubber Cutter Kit
Includes 8" Blade Pair, 8" Guide, Rubber Cutter, and Foot Plate	

ACCESSORIES

ITEM #	DESCRIPTION
SB-1575A	Foam Rubber Cutter
SB-2607018011	8" Blade Pair
SB-2608135021	8" Guide
SB-2607018012	12" Blade Pair
SB-2608135022	12" Guide
SB-2608000908	Foot Plate



FireGuard

Fire Protection Fabric

WHY CHOOSE FIRE GUARD?

- LIGHTWEIGHT
- BETTER PERFORMANCE
- LOWER PRICE

FireGuard

FireGuard is a proprietary blend of high-performance fibers that provide an extraordinary level of protection against direct flame and extreme heat.

PHYSICAL SPECIFICATIONS

WIDTH	58 in.
THICKNESS	.054 in.
WEIGHT	6.04 oz/yd^2
ELONGATION ASTM D5034-1995 (%)	
Length	73.2%
Width	230.7%
COLOR	Charcoal

Standard shipping of +/- 10-% applies on all rolled goods.

BENEFITS

- Lightweight, flexible, and odor resistant
- Unequaled stretch, comfort, hand and workability
- In Stock, Can Ship Same Day!

SKANDIA

SKANDIA

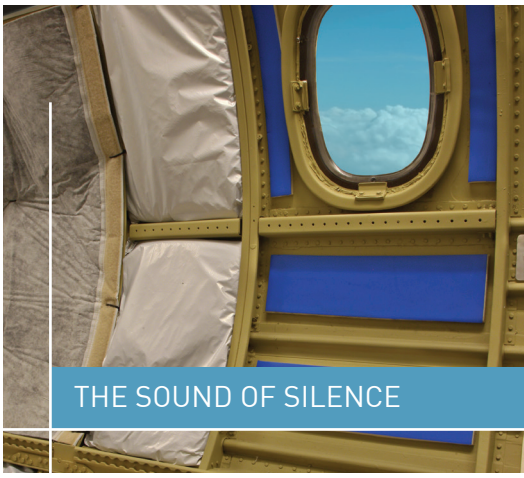
SOUNDPROOFING SOLUTIONS

A quiet aircraft means a quiet journey.

A quiet journey means you arrive fresh and without travel fatigue.

A journey without travel fatigue means you traveled in a quiet aircraft.

A quiet aircraft starts with Skandia



THE SOUND OF SILENCE

CUSTOMIZED SOUNDPROOFING SOLUTIONS

EVERYTHING YOU NEED CUSTOMIZED IN A SINGLE PACKAGE

Skandia's customized comprehensive solutions provide our customers with a single turn-key system of all necessary soundproofing components for the VVIP, OEM and refurbishment markets.

BEGIN BY LISTENING

Skandia can provide an in-flight acoustical analysis of your cabin's sound levels to customize the best solution for your aircraft.

THE SOLUTION STARTS WITH THE FINEST MATERIALS

Radiant Panel Certified Thermal & Acoustic Materials

Skandia manufactures a comprehensive selection of aircraft thermal/acoustic materials including insulation strip blankets, over frame blankets and carpet padding.

All Skandia soundproofing solutions meet the Radiant Panel Flammability test for Part 25 aircraft, 14 CFR 25.856(a).

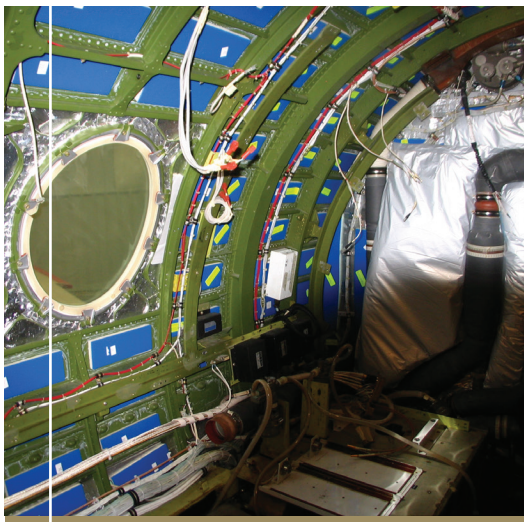
Skandia has complete soundproofing systems for more than 80 different aircraft models.

FROM A TEAM YOU CAN TRUST

Skandia is a leading aircraft interiors specialist, providing innovative product and expert services to the aviation industry since 1983.

All divisions are supported by an in-house team of DERs and DARs that efficiently respond to our diverse customer base including major OEMs, completion and modification centers, as well as private aircraft owners and upholstery shops.

Take advantage of Skandia's engineered approach and applications experience to meet your goals.



Skandia can perform an in-flight acoustical analysis of your cabin's sound levels to customize the best solution for your aircraft.

Call for a quote

ISO 17025 ACCREDITED LABORATORY

AS 9100 REGISTERED

ISO 9001

Connect with us!

5000 North Highway 251, Davis Junction, IL 61020 | 815 393 4600 | www.skandiainc.com

SKANDIA

SOUNDPROOFING SOLUTIONS

By combining engineering analysis with the most effective materials available, Skandia delivers significant, qualified results.

THERMAL/ACOUSTIC SYSTEMS WITH MAXIMUM NOISE REDUCTION + MINIMAL WEIGHT

In soundproofing engineering, Skandia combines the latest technological advancements and innovation to reduce weight and maximize performance

DATA DICTATES DESIGN

Utilizing state-of-the-art equipment, Skandia engineers perform sound frequency tests in order to establish an aircraft's unique acoustical signature while at cruise speed and altitude.

OUR ENGINEERING PROCESS TREATS BOTH AIRBORNE AND STRUCTURAL-BORNE SOUND

Each Skandia soundproofing solutions is an efficient system of materials incorporating damping, absorption, and barrier materials to effectively treat all sound sources. Each application is engineered with proven and reliable materials, all delivered with flammability certification.

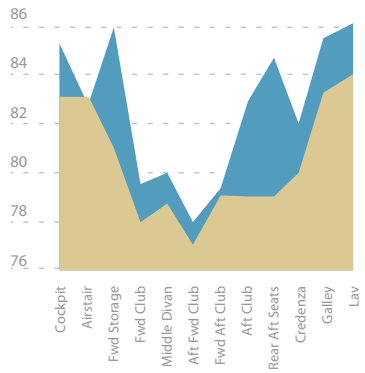
SKANDIA CAN PROVIDE AN IN-FLIGHT ACOUSTICAL ANALYSIS OF YOUR CABIN'S SOUND LEVELS TO CUSTOMIZE THE BEST SOLUTION FOR YOUR AIRCRAFT.

TEST DATA. PROVEN RESULTS.

Original Insulation

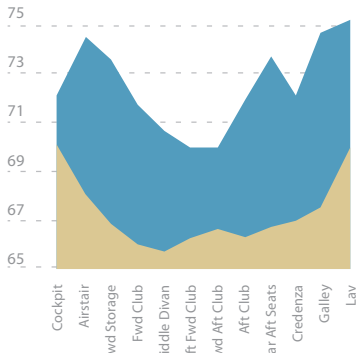
Skandia Soundproofing Solution

dB (L) Sound Pressure Level
IN DECIBELS



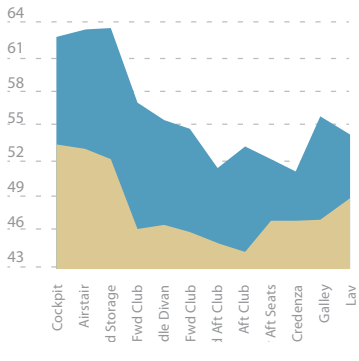
- 3.2

dB (A) Adjusted Sound Level
IN DECIBELS



- 4.3

dB (SIL) Sound Intensity Level
IN DECIBELS



- 8.7

Connect with us!

5000 North Highway 251, Davis Junction, IL 61020 | 815 393 4600 | www.skandiainc.com

AeroTherm

Thermal Acoustic Insulation

Radiant Panel Certified

AeroTherm SK-7000

Skandia's Radiant Panel AeroTherm provides thermal/acoustic insulation. Products can be provided to specified widths, lengths, and thicknesses.

Our reinforced film resists abrasion, moisture, and contaminants.

The fiberglass thermal/acoustic insulation material is lightweight, water-repellent and fire-retardant.

EASE Thermal Insulation Systems provide superior thermal insulation and acoustic attenuation of high frequencies in the important dBSIL range (Speech Interference Level).

Repair/sealing tape available.

BENEFITS

- Radiant Panel Certified
- In Stock, Can Ship Same Day!
- Lightweight
- Meets 25.856 (a)
- High Frequency Attenuation
- Custom Fabrication is available to meet specialized applications
- Skandia's AeroTherm Strip Blankets reduce cost by allowing interior/airframe technicians to fabricate and install blankets at the point of use (utilizing SK-TX series of insulation sealing tape).

SKANDIA

TECHNICAL DATA SHEET

AeroTherm

Thermal Acoustic Insulation
Radiant-Panel Certified

SK-7000

Typical Physical Properties

Thickness	1, 2, 3 in
Width	7, 9, 10, 11, 12, 15, 16, 20, 22 in
Length	1" thick x 50' roll
	2" thick x 50' roll
	3" thick x 25' roll
Weight	1 in thick: 0.07 lb/ft^2
	2 in thick: 0.12 lb/ft^2
	3 in thick: 0.17 lb/ft^2
Color	Dull Grey
Flammability	
14 CFR 25.853(a) 12-Second Vertical	Passes
14 CFR 25.853(a) 60-Second Vertical	Passes
14 CFR 25.856(a) Radiant Panel	Passes
Fiberglass Density	0.6 pcf
Vapor Barrier Film Thickness	0.5 mil
Thermal Conductivity, ASTM C518	0.242 BTU in/F/ft • h/@75°F
Transmission Loss, ASTM E90 @ 1 in thick:	
1000 Hz	11 dB
2000 Hz	19 dB
4000 Hz	29 dB
Additional Specifications/Compliance	
BMS 8-48, ASTM C8000-94, STM 26701, DMS 1967E	

SK-7001-I Insulation Material	
Corrosion	Boeing BMS 8-48 W - Type 3, Class 2, Grade B
SK-7000-F2 Barrier Film	Boeing BMS 8-377, Type II, Class 1

SKANDIA

TECHNICAL DATA SHEET

SKANDIA

AeroTherm

Thermal Acoustic Insulation .6 pcf
Radiant Panel Certified

SK-7001-I Lightweight, Water-Repellent Insulation Material

Typical Physical Properties

Thickness		1.00 + .025 in
Width		72.0 ± 0.5 in
Weight		0.050 + 0.005 - 0.004 lb/ft^2
Density		0.60 lbs./ft^3
Color		Yellow
Binder Content		17.5 ± 2.5%
Water Repellency	ASTM C800-94	20 g, max
Wicking	ASTM C800-94	0.25 in, max
Temperature Limit		450^{o}F
Corrosion	Boeing BMS 8-48	None
Transverse Airflow	ASTM C522	560 MKS Rayls, min

FLAMMABILITY

Radiant Panel	14 CFR 25.856(a)	Passes	
Vertical Test	Boeing BSS 7230 and		Extinguish Time: 10 sec, max
(60-second ignition)	14 CFR 25.853(a), Passes		Burn Length: 4 in, max
12-Second Vertical	14 CFR 25.853(a), Passes		Drip Extinguish Time: No Drips
45-Degree Angle Test	Boeing BSS 7230 and		Extinguish Time: 5 sec, max
	14 CFR 25.855(d)		Afterglow Time: 10 sec, max
			Flame Penetration: None
Punking Test	Boeing BSS 7230		No Punking

ACOUSTICAL PROPERTIES

Transmission Loss	ASTM E90	1000 Hz Oct. Band: 11.5 dB, min
(using three 1" layers of .6 PCF insulation)		2000 Hz Oct. Band: 18.5 dB, min
		4000 Hz Oct. Band: 26.5 dB, min

THERMAL CONDUCTIVITY (ASTM C-518 (BTU-in/^{o}F•h•ft^2)

DENSITY lb/ft^3		THICKNESS	MEAN TEMP ^{o}F (BETWEEN HOT AND COLD SURFACE)					
0.60	1"	50	75	100	200	300	400	
			0.226	0.242	0.258	0.332	0.428	0.556

Compliance with OEM and Industry specifications per:

- Boeing BMS 8-48 Type 3, Class 2, Grade B
- ASTM C800-94
- Douglas DMS 1967
- Lockheed STM 26-701

SKANDIA

TECHNICAL DATA SHEET

AeroTherm

Thermal Acoustic Insulation
Vapor Barrier Film
Radiant Panel Certified

SK-7000-F2 Lightweight, High-Strength Vapor Barrier Film

Typical Physical Properties

Weight	1.0 oz./yd^2
Thickness	0.0005 in
Thread Adhesion	3.5 (lbs./1.5")
Heat Seal (T-peel)	
Warp	4.0 (lbs./in)
Fill	3.7 (lbs./in)
Heat Sealing Instructions	Heat-sealing of SK-7000F2 can be done by hand iron, impulse, and ultrasonic methods. Heat-sealing is done with yarn-side to yarn-side. Use a heat setting between 375° to 400°F. Always keep a hand iron in motion to prevent shrinkage of the film.
Flammability	
FAR 25.853(a) 12-Second Vertical Test	Passes
FAR 25.853(a) 60-Second Vertical Test	Passes
FAR 25.856(a) Radiant Panel	Passes
Moisture Permeance	0.88 grains/ft^2/24 hrs/in of Hg
Reinforcement	20 x 10 Leno Scrim
Burst Strength	64 psi
Color	Dull Grey
Fabrication Methods	May be sealed with heat, tape, stitching, or ultrasonically
Taping	For sealing, repairs, and local reinforcements of SK-7001, SK-T3 or SK-T4 tapes are recommended. These tapes are lightweight, reinforced, and pressure sensitive.
Packaging	
Roll Length	Up to 350 yards
Width	52" ± 1"
Custom Cuts	Available upon request
Storage and Shelf Life	SK-7000-F2 has a shelf life of one year from the date of shipment when stored in the original container at 75% relative humidity and between 50°F and 90°F.

Max operating temp 120-130C (250-265F)
Compliant with BMS 8-377, Type II, Class 1

Standard shipping of +/- 10-% applies on all rolled goods.

AeroTherm

Thermal Acoustic Insulation

Quilted Blanket

AeroTherm SK-QB3

Skandia's Quilted-Blanket provides a durable utility liner for military, cargo aircraft, helicopters; as well as nose-lockers.

Edge-binding is available. SK-QBT1

BENEFITS

- Meets 14 CFR 25.853(a) 12 and 60 Second Vertical, MIL-C-22787 and BMS8-48
- Lightweight
- High-Frequency Attenuation

Standard shipping of +/- 10-% applies on all rolled goods.

SKANDIA

TECHNICAL DATA SHEET

AeroTherm

Thermal Acoustic Insulation
Quilted-Blanket

SK-QB3

Typical Physical Properties	SK-QB3
Thickness	1" nominal
Width	48"
Length	Up to 50' roll
Weight	0.30 lb/sq ft
Quilt Pattern	3"x"3" diamond
Color	Grey
Flammability	
14 CFR 25.853(a) 12-Second Vertical	Passes
14 CFR 25.853(a) 60-Second Vertical	Passes
14 CFR 25.856(a) Radiant Panel	----------
Fiberglass Density	.6 pcf
Recommended Edge-Binding Tape	SK-QBT1

SK-QB3 grey facing meets MIL-C-22787
Fiberglass meets BMS8-48
SK-QBT1 meets MIL-C-22787

SKANDIA

AeroFasteners

For Installation of
Blankets & Barrier

SK-IS-1.5*

SK-ISR-2

SK-IS-3.4

AeroFasteners

A wide variety of fasteners are available for installation of AeroBlankets, AeroBarriers, etc. Please contact Skandia's Acoustics department for additional fastener recommendations by e-mailing Info@SkandiaInc.com or calling 815-393-4600.

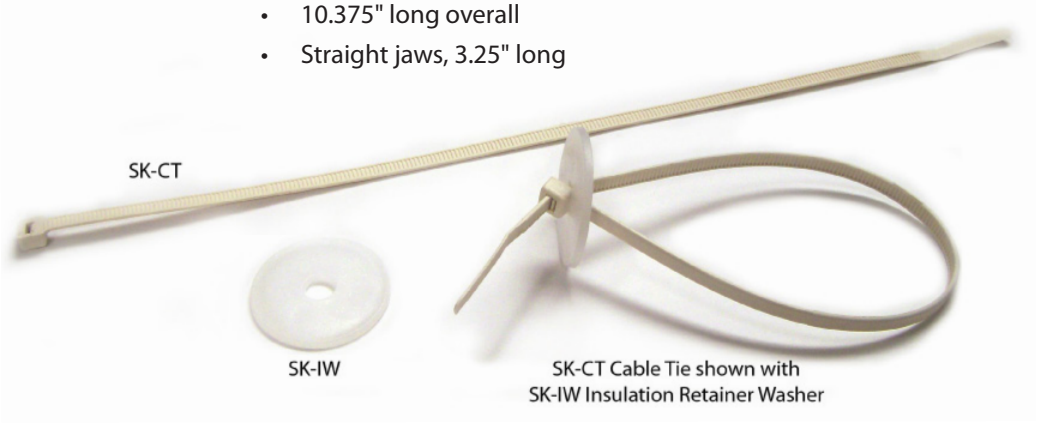
ITEM #	DESCRIPTION
SK-IS-1.5*	Insulation Stud
SK-IS-3.4*	Insulation Stud
SK-ISR-2	Insulation Stud Retainer

*Use with SK-ISR-2

AeroFasteners
For Installation of Blankets & Barrier

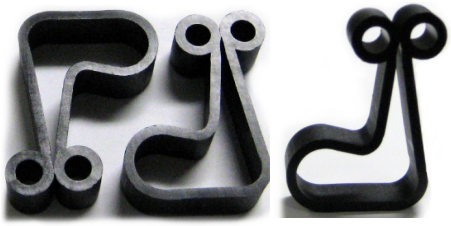
Sharp tip allows for quick and easy installation of
SK-CT fasteners into overframe blankets and barrier

- Hemostat pliers with cushion grip for intricate installation work in tight spaces
- Ratchet lock in the handle allows you to vary gripping pressure
- Jaws are serrated and hold firmly without cutting
- Stainless steel for corrosion resistance
- 10.375" long overall
- Straight jaws, 3.25" long



SK-CT Cable Tie shown with
SK-IW Insulation Retainer Washer

- 11.50" Nylon Cable Tie used for securing blankets and barriers to the frame, quickly and simply!
- Fire-Retardant; handles temperatures from -40° to +203°F
- Meet UL94V-0 flammability requirements
- Tensile strength: 50 lbs.
- Sold in 50 ct. pack
- Sold separately: SK-IW: Insulation Retainer Washer



2390011

- 2390011 (plastic) and 2310025 (stainless steel) are used to temporarily (removable) hold overframe blankets in position while SK-CT fasteners are installed

- 2310025 can be used to attach overframe blankets when other means are not possible

2310025

ITEM #	DESCRIPTION
Hemostat	Installation Tool
SK-CT**	F/R Nylon Cable Tie, 11.50"
SK-IW	Insulation Retainer Washer
2310025	Spring Clip Insulation Clamp
2390011	Insulation Clamp, Nylon

**Use with SK-IW

AeroTapes

Insulation and Utility Tape w/PSA

Radiant Panel Certified

AeroTape SK-T3 • SK-T4

Radiant Panel Certified tapes for aircraft, suitable for a wide variety of applications, including insulation sealing, closing out window/avionic spaces, or attaching adjacent materials.

Note: Meets 14 CFR 25.856(a) Radiant Panel by itself. Must be tested in composite form if using any other materials

BENEFITS

- Radiant Panel Certified
- Widths from 3" – 4"
- High Tack and Peel Strength
- Reinforced FR Scrim
- Will Not Support Corrosion

SKANDIA

TECHNICAL DATA SHEET

AeroTape
Radiant-Panel Certified

SK-T3 • SK-T4

Typical Physical Properties	SK-T3 • SK-T4
Size	3" x 60 yard roll • 4" x 60 yard roll
Weight	2.5 oz/yard^2
Color	Dull Grey
Construction	5 mil metallized tedlar, F/R acrylic PSA
Total Thickness	6 mil
Flammability	
14 CFR 25.853(a) 12-Second Vertical	Passes
14 CFR 25.853(a) 60-Second Vertical	Passes
14 CFR 25.856(a) Radiant Panel	Passes
BMS 5-157 Type I, III, IV Grade A & B	Passes
Tensile Strength, PSTC-31	28 lbs/avg. inch width
Peel Strength, PSTC-1	> 120/in. avg; 3 day
Shelf Life	Maximum of 12 months in cool, dry storage

UTILITY TAPES • DO NOT PASS RADIANT PANEL

Typical Physical Properties	P-225-3FR
Size	3" x 60 yard roll
Weight	10.5 oz/yard^2
Color	White
Construction	PE Coated cloth, F/R acrylic PSA
Total Thickness	20 mil
Flammability	
14 CFR 25.853(a) 12-Second Vertical	Passes
Tensile Strength, PSTC-31	28 lbs/avg. inch width
Peel Strength, PSTC-1	> 120/in. avg; 3 day
Shelf Life	Maximum of 12 months in cool, dry storage

SKANDIA

Flame Barrier

Polymer Coated,
Woven Fiberglass Fabric
Radiant Panel Certified

Flame Barrier SK-15004

Flame Barrier is a lightweight, polymer-coated fiberglass fabric with which is certified to 14 CFR 25.856(a) Radiant Panel. Flame Barrier utilizes woven fiberglass as the reinforcement for the flexible polymer coated flame barrier. The fiberglass makes the material extremely flame resistant, with high tensile strength to weight, and superior dimensional stability.

Flame Barrier is used in aerospace applications such as a pipe, hose or ducting wrap, and as edge binding for Skandia's quilted blanket, SK-QB2RP.

Available in 4.0 oz. per square yard weight, Flame Barrier is provided in 50" wide rolls at custom lengths.

BENEFITS

- Radiant Panel Certified
- Excellent Strength-To-Weight Ratio
- Suitable for many applications

Standard shipping of +/- 10-% applies on all rolled goods.

TECHNICAL DATA SHEET

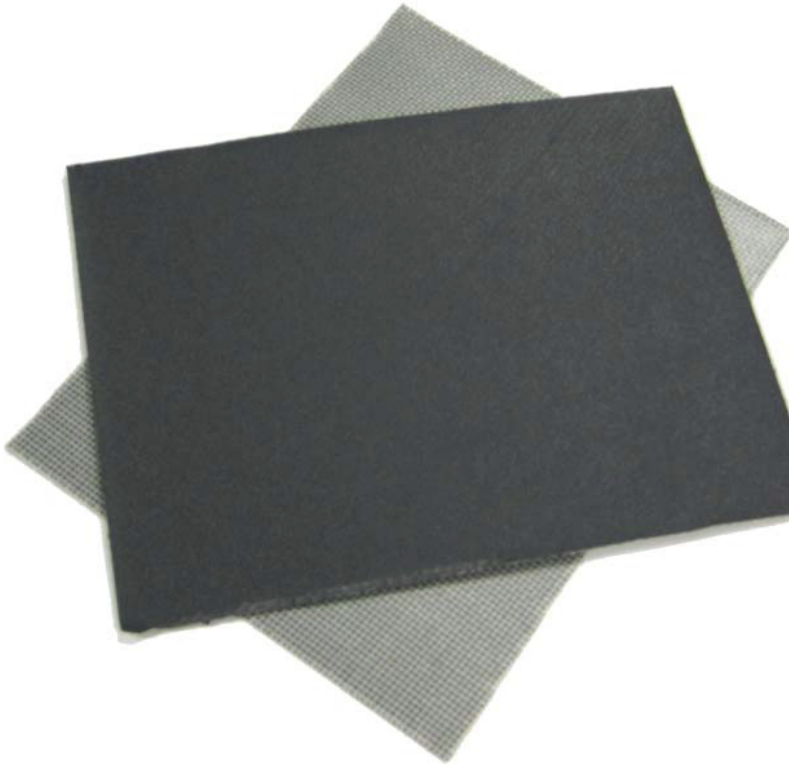
Flame Barrier

Polymer Coated, Woven
Fiberglass Fabric
Radiant Panel Certified

SK-15004 • Utility Fabric

Can be used in a wide variety of covering and/or facing applications, including edge binding for quilted insulation blanket, SK-QB2RP

Typical Physical Properties	
Roll Size	50" x linear yard
Weight	4.0 oz/sq yd
Thickness	.01"
Color	Dark Grey
Flammability	
14 CFR 25.853(a) 12-Second Vertical	Passes
14 CFR 25.853(a) 60-Second Vertical	Passes
14 CFR 25.856(a) Radiant Panel	Passes
BMS 8-370	Meets
NBS Smoke	$D_s < 50$
Breaking Strength, FTM 5100	> 110 lbs/in
Tear Strength, ASTM D1117	> 12 lbs.
FED-STD-191	Tensile (grab) Warp/Fill 145/119 lb



AeroBarrier

60 oz. Barriers

AeroBarriers 60 oz. Barriers

AeroBarrier is a flexible sheet material used for noise control applications in aircraft.

Meets 14 CFR 25.853(a) 12-Second Vertical requirements and delivers excellent acoustic performance at any desired weight level.

Sold by the linear yard.

BENEFITS

- In Stock, Can Ship Same Day!
- Excellent transmission loss, at high frequencies

SKANDIA

TECHNICAL DATA SHEET

AeroBarrier

Flexible Barrier

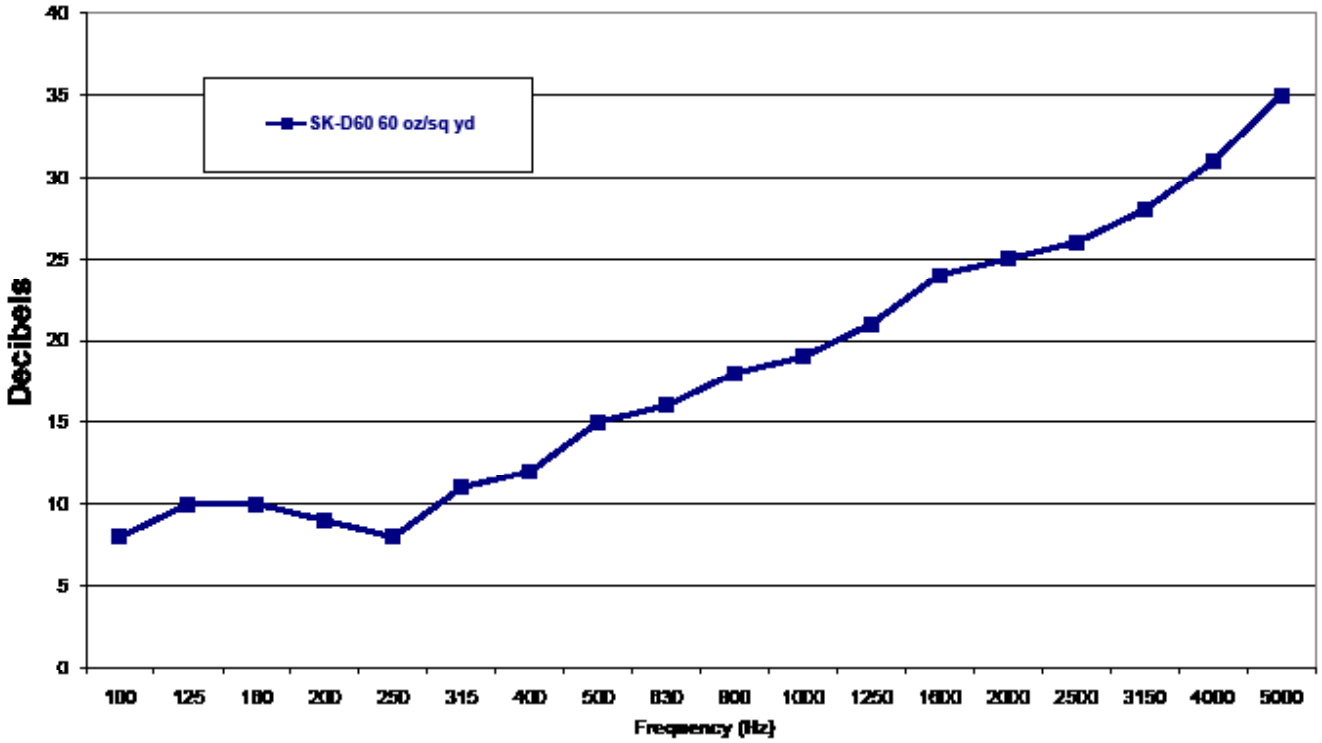
TYPICAL PHYSICAL PROPERTIES

SIZE	50" x linear yard
WEIGHT, FTM 5041	60 oz/sq yard
THICKNESS, FTM 5030	0.03 in
COLOR	Black/White

FLAMMABILITY

14 CFR 25.853(a) 12-Second Vertical Passes

Aerobarrier Transmission Loss (TL)



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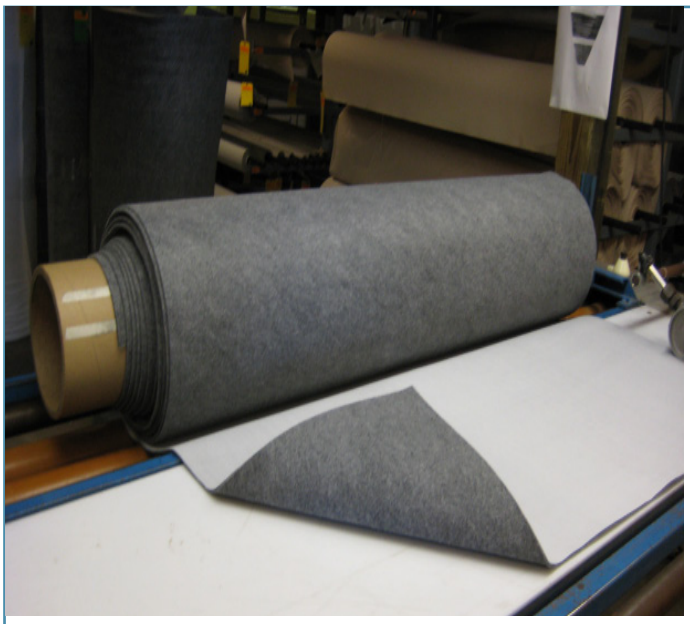


AeroBlanket

Acoustic Insulation
Radiant Panel Certified

AeroBlanket

SK-8013 & SK-8014

AeroBlanket consists of one layer of AeroBarrier bonded to one layer of Radiant Panel Certified, water repellent Nomex fiber. The barrier is available in various weights, providing increasing levels of sound transmission loss.

AeroBlanket is an "overframe" blanket, which is used to closeout the insulation and prevent a direct path for sound and cold into the aircraft cabin. The AeroBarrier component of the blanket is highly effective in reducing sound levels and the fiber is very effective at reducing high frequency sound levels.

AeroBlanket is also available with barrier sandwiched between two layers of fiber. All AeroBlankets are provided 48" wide, at custom lengths on a roll.

BENEFITS

- Radiant Panel Certified
- Excellent Transmission Loss Performance
- Inherently Water Repellent

SKANDIA

Standard shipping of +/- 10-% applies on all rolled goods.

TECHNICAL DATA SHEET

AeroBlanket

High Performance Barrier w/Light-weight, Low Density Fiber Blanket Radiant Panel Certified

SK-8013 • SK-8014 Water Repellent Overframe Blanket

Typical Physical Properties	SK-8013	SK-8014
Size	48" x linear yard	48" x linear yard
Weight	40 oz/sq yard	50 oz/sq yard
Thickness	0.13 in,	0.16 in
Color	Dark Grey/White	Dark Grey/White
Flammability		
14 CFR 25.853(a) 60-Second Vertical	Passes	Passes
14 CFR 25.856(a) Radiant Panel	Passes	Passes
Barrier	Cast Polymer	Cast Polymer
Weight	30 oz/sq yard	40 oz sq/yard
Thickness	0.016 in	0.04 in
Fiber	One Layer of 0.125" thick Radiant Panel Nomex	One Layer of 0.125" thick Radiant Panel Nomex
Weight	10 oz/sq yard	10 oz/sq yard
Thermal Range	-55°F to 450°F	-55°F to 450°F
Water Repellent	Meets BMS 8-42W	Meets BMS 8-42W

AeroBlanket

Acoustic Insulation
Radiant Panel Certified

AeroBlanket

SK-8160

AeroBlanket consists of one layer of AeroBarrier bonded between two layers of Radiant Panel Certified, water repellent Nomex fiber.

AeroBlanket is an overframe blanket, which is used to close-out the insulation and prevent a direct path for sound and cold into the aircraft cabin. The AeroBarrier component of the blanket is highly effective in reducing sound levels and the fiber is very effective at reducing high frequency sound levels.

All AeroBlankets are provided 48" wide, at custom lengths on a roll. Custom fabrication is also available to suit specialized applications.

BENEFITS

- Radiant Panel Certified
- Excellent Transmission Loss Performance
- Inherently Water Repellent

SKANDIA

Standard shipping of +/- 10-% applies on all rolled goods.

TECHNICAL DATA SHEET

AeroBlanket

High Performance Barrier w/Light-weight, Low Density Fiber Blanket Radiant Panel Certified

SK-8160 79 oz. Overframe Blanket

Typical Physical Properties	
Size	48" x linear yard
Weight	79 oz/sq yard
Thickness	0.3 in
Color	Dark Grey
Flammability	
14 CFR 25.853(a) 60-Second Vertical	Passes
14 CFR 25.856(a) Radiant Panel	Passes
Barrier	Vinyl Barrier
Weight	60 oz/sq yard
Thickness	0.06 in
Fiber	Two Layers of 0.125" thick Radiant Panel Nomex
Weight	9.5 oz/sq yard (per layer)
Thermal Range	-55°F to 450°F
Thermal Conductivity DIN EN 12664	0.291 BTU in/ft^2 • hr • °F @73.4°F

SKANDIA

TECHNICAL DATA SHEET

AeroFelt

9.5 Oz Carpet Pad

SK-8118

Acoustical fiber felt pad, versatile thermal and acoustic insulation

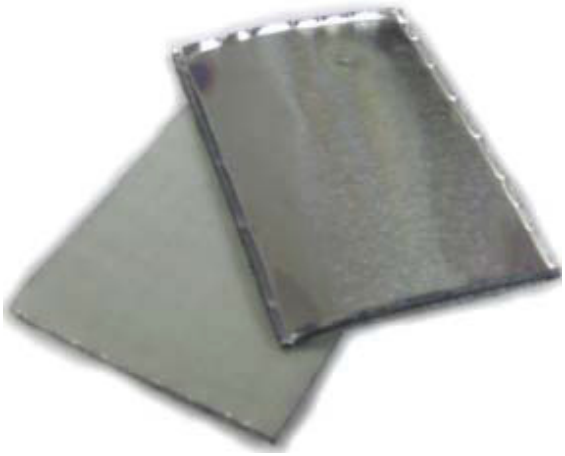
TYPICAL PHYSICAL PROPERTIES

SIZE	50" x linear yard
WEIGHT, FTM 5041	9.5 oz/sq yard
THICKNESS, FTM 5030	0.125 in
COLOR	Dark Grey
FLAMMABILITY	
14 CFR 25.853(a) 60-second Vertical	Passes
14 CFR 25.856(a) Radiant Panel	Passes
THERMAL RANGE	-55 °F to 450 °f
THERMAL CONDUCTIVITY	K= .24 BTU/in/hr/ °F/ft^2

***AVAILABLE WITH WATER-REPELLENT**

Standard shipping of +/- 10-% applies on all rolled goods.

SKANDIA



AeroDamp

High Performance Damping
Radiant Panel Certified

AeroDamp SK-8240PSA • SK-8240FPSA

IF YOU PURCHASE damping for floor boards, the outboard side of panels and cabinetry, Skandia has an improved product that offers the triple advantage: **less weight, higher performance and lower cost.**

Results are: **6-10% lower weight**; **25% lower cost**; and **improved damping** results in side by side testing at an independent testing lab.

AERODAMP is a constrained layer damping sheet with a self-adhesive backing: just peel and stick to reduce resonance in cabin shell panels. Performs equally well on other cabin structures such as cabinets, bulkheads and floor panels.

BENEFITS

- Radiant Panel Certified
- Excellent Performance to Weight Ratio
- In stock, ships same day!

SKANDIA

Standard shipping of +/- 10-% applies on all rolled goods.

SKANDIA

TECHNICAL DATA SHEET

AeroDamp

High Performance Damping
Radiant Panel Certified

SK-8240PSA • SK-8240FPSA

Typical Physical Properties	SK-8240PSA	SK-8240FPSA
Size	24" x 48"	24" x 48"
Weight	5.0 oz/sq ft	7.4 oz/sq ft
FTM 5041	2.5 lb/sheet	3.7 lb/sheet
Thickness		
FTM 5030	0.04 in	0.04 in
Color	White	Silver
Flammability		
14 CFR 25.853(a) 12-Second Vertical	Passes	Passes
14 CFR 25.853(a) 60-Second Vertical	Passes	Passes
14 CFR 25.856(a) Radiant Panel	Passes	Passes
Barrier	40 oz/sq yd	40 oz/sq yd
Operating Temperature		
Min Application Temp	50°F	50°F
Max Continuous Operating Temp	200°F	200°F
Max Intermittent Operating Temp	250°F	250°F
Shelf Life	One year when stored at 70°F/50% R.H. out of direct sunlight.	

SKANDIA

E-A-R

ADC Specialty Composites

ADC-005

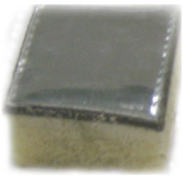
ADC-006

ADC-122

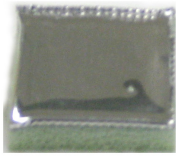
ADC-124

ADC-126

ADC-152

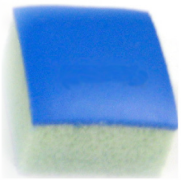


ADC-156



ADC-224

ADC-226



ADC-252

ADC Specialty Composites

Temperature and Frequency Sensitive Materials for Pressurized and Non-Pressurized Aircraft

Demonstration of Compliance with Material Flammability Requirements per 14 CFR 25.853(a)12-Second Vertical and 60-Second Vertical and 14 CFR 25.856(a) Radiant Panel.

All products meet 12-Second Vertical/60-Second Vertical/Radiant Panel with the exception of ADC-122 and ADC-152 which only meets 12-Second Vertical and Radiant Panel.

BENEFITS

- Controls both Airborne Noise and Structural Vibrations.
- In Stock, Can Ship Same Day!

SKANDIA

TECHNICAL DATA SHEET

E-A-R
ADC Specialty Composites

ADC Specialty Composites

Skandia stocks E-A-R Damping, Absorption, and Barrier materials to reduce cabin noise levels. When the right combination of these materials is installed in the specified location in an aircraft, both airborne acoustic energy and structural-borne vibration energy are reduced.

COMPOSITE	DESCRIPTION	WEIGHT		DIMENSIONS
ADC-005	Structural Damping	.41 lbs/ft^2	3.69 lbs.	27" x 48", 9 sq. ft.
	.04" Thick	2.00 kg.	1.67 kg.	69 cm x 122 cm, .836 sq. m.
ADC-006	Structural Damping	.50 lbs/ft^2	4.50 lbs.	27" x 48", 9 sq. ft.
	.05" Thick	2.44 kg.	2.04 kg.	69 cm x 122 cm, .836 sq. m.
ADC-122	Acoustical Barrier/Absorber	.60 lbs/ft^2	5.40 lbs.	27" x 48", 9 sq. ft.
	.310" Thick	2.93 kg.	2.45 kg.	69 cm x 122 cm, .836 sq. m.
ADC-124	Low Temperature Damping	.26 lbs/ft^2	2.34 lbs.	27" x 48", 9 sq. ft.
	.255" Thick	1.27 kg.	1.06 kg.	69 cm x 122 cm, .836 sq. m.
ADC-126	Low Temperature Damping	.60 lbs/ft^2	5.40 lbs.	27" x 48", 9 sq. ft.
	.300" Thick	2.93 kg.	2.45 kg.	69 cm x 122 cm, .836 sq. m.
ADC-152	Acoustical Barrier/Absorber	.67 lbs/ft^2	6.03 lbs.	27" x 48", 9 sq. ft.
	.560" Thick	3.27 kg.	2.74 kg.	69 cm x 122 cm, .836 sq. m.
ADC-156	Low Temperature Damping	.74 lbs/ft^2	6.66 lbs.	27" x 48", 9 sq. ft.
	.550" Thick	3.61 kg.	3.02 kg.	69 cm x 122 cm, .836 sq. m.
ADC-224	Mid Temperature Damping	.26 lbs/ft^2	2.34 lbs.	27" x 48", 9 sq. ft.
	.258" Thick	1.27 kg.	1.06 kg.	69 cm x 122 cm, .836 sq. m.
ADC-226	Mid Temperature Damping	.60 lbs/ft^2	5.40 lbs.	27" x 48", 9 sq. ft.
	.300" Thick	2.93 kg.	2.45 kg.	69 cm x 122 cm, .836 sq. m.
ADC-252	Acoustical Barrier/Absorber	.67 lbs/ft^2	6.03 lbs.	27" x 48", 9 sq. ft.
	.560" Thick	3.27 kg.	2.74 kg.	69 cm x 122 cm, .836 sq. m

SKANDIA

AeroLite Carpet Pad

Acoustical Carpet Pad
Dimensionally Stable

AeroLite Carpet Pad SK-7328 • SK-7338 • SK-7348 • SK-7348-80W

AeroLite Carpet Pad is a synergistic family of foam and felt composite used for a durable pad and it provides both thermal and acoustic floor level insulation. The padding is available in various thicknesses, providing increasing levels of acoustic absorption, sound transmission loss, thermal insulation and cushioning effect.

The composite pad delivers the advantages of both foam and felt paddings while eliminating their disadvantages when used alone, e.g. will not wrinkle, improved resistance to compression set, excellent durability. Additionally, it has very low electrostatic discharge potential.

AeroLite Carpet Pad is a versatile material, which can be manufactured as a carpet pad and in combination with AeroBarrier as an effective floor level acoustical barrier.

AeroLite Carpet Pad is available in 1/4", 3/8" and 1/2" thicknesses x 52" wide by the linear yard; also available 1/2" thick x 80" wide x linear yard. Additionally, custom fabrication is available to meet specialized applications.

BENEFITS

- Provides a Plush Feel Underfoot
- More Durable than a Fiber Pad
- Low Thermal Conductivity Value
- Excellent Acoustic Absorption
- Low Static Propensity
- 80" width accommodates wide body biz jets without seaming (1/2" thickness only)

Standard shipping of +/- 10-% applies on all rolled goods.

TECHNICAL DATA SHEET

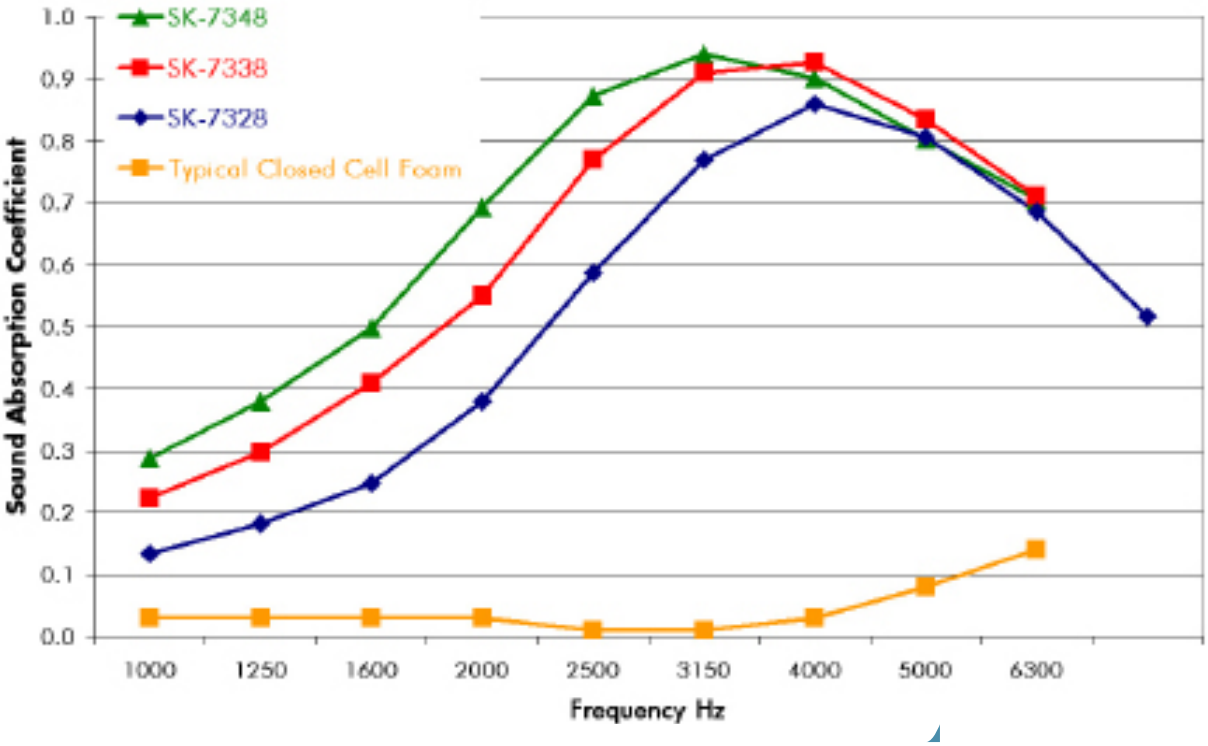
AeroLite Carpet Pad

Acoustical Carpet Pad
Dimensionally Stable

SK-7328 • SK-7338 • SK-7348 • SK-7348-80W

Typical Physical Properties

Size	52" ± .25" x linear yard; 80" ± .50" x linear yard, 0.50" thickness only
Thickness	0.25 in, 0.375 in, 0.50 in
Weight	24, 39, 42 oz/sq yard
Color	Dark Grey and Beige
Flammability	
14 CFR 25.853 12-Second Vertical	Passes
Thermal Conductivity	≤.254 BTU-IN/Hr -°F/sq ft @ 0.50 in



AeroLite Carpet Pad

Acoustical Carpet Pad w/Sound and Moisture Barrier

AeroLite Carpet Pad w/Barrier SK-7348-D32 • SK-7348-D60

AeroLite Carpet Pad with Sound Barrier provides acoustic absorption, sound transmission loss, thermal insulation and a comfortable cushioning effect.

The composite pad delivers the advantages of both foam and felt padding while eliminating disadvantages when used alone. For instance, it will not wrinkle, provides improved resistance to compression set, excellent durability and has very low electrostatic discharge potential.

The addition of the integral sound and moisture barrier layer reduces under floor noise entering the cabin and prevents liquid spills from passing through the pad and into the airframe.

BENEFITS

- Provides a Plush Feel Underfoot
- Blocks Under Floor Noise
- Protects Airframe from Spilled Liquids and Rain
- More Durable than a Fiber Pad
- Low Thermal Conductivity Value
- Excellent Acoustic Absorption
- Low Static Discharge Propensity
- Dimensionally Stable

Standard shipping of +/- 10-% applies on all rolled goods.

TECHNICAL DATA SHEET

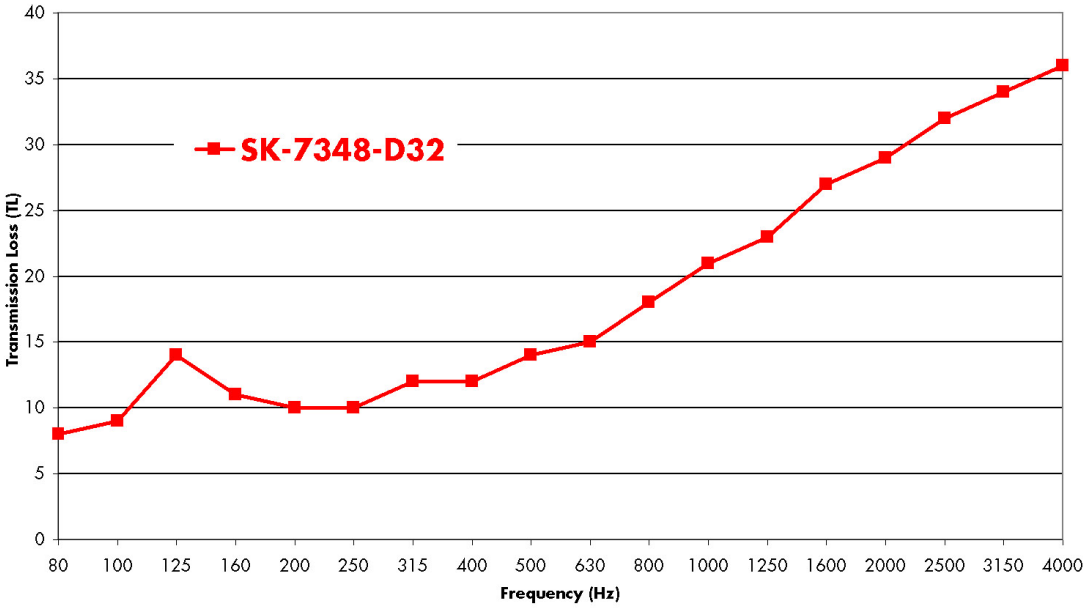
AeroLite Carpet Pad

Acoustical Carpet Pad
w/Sound and Moisture Barrier

SK-7348-D32 • SK-7348-D60

INSTALLATION: Install with the barrier side up and the Nomex fibers down. It can be secured using Skandia's Double-Sided Tape: P-108-2-N or Hook velcro (attaches directly to fiber; Loop not required).

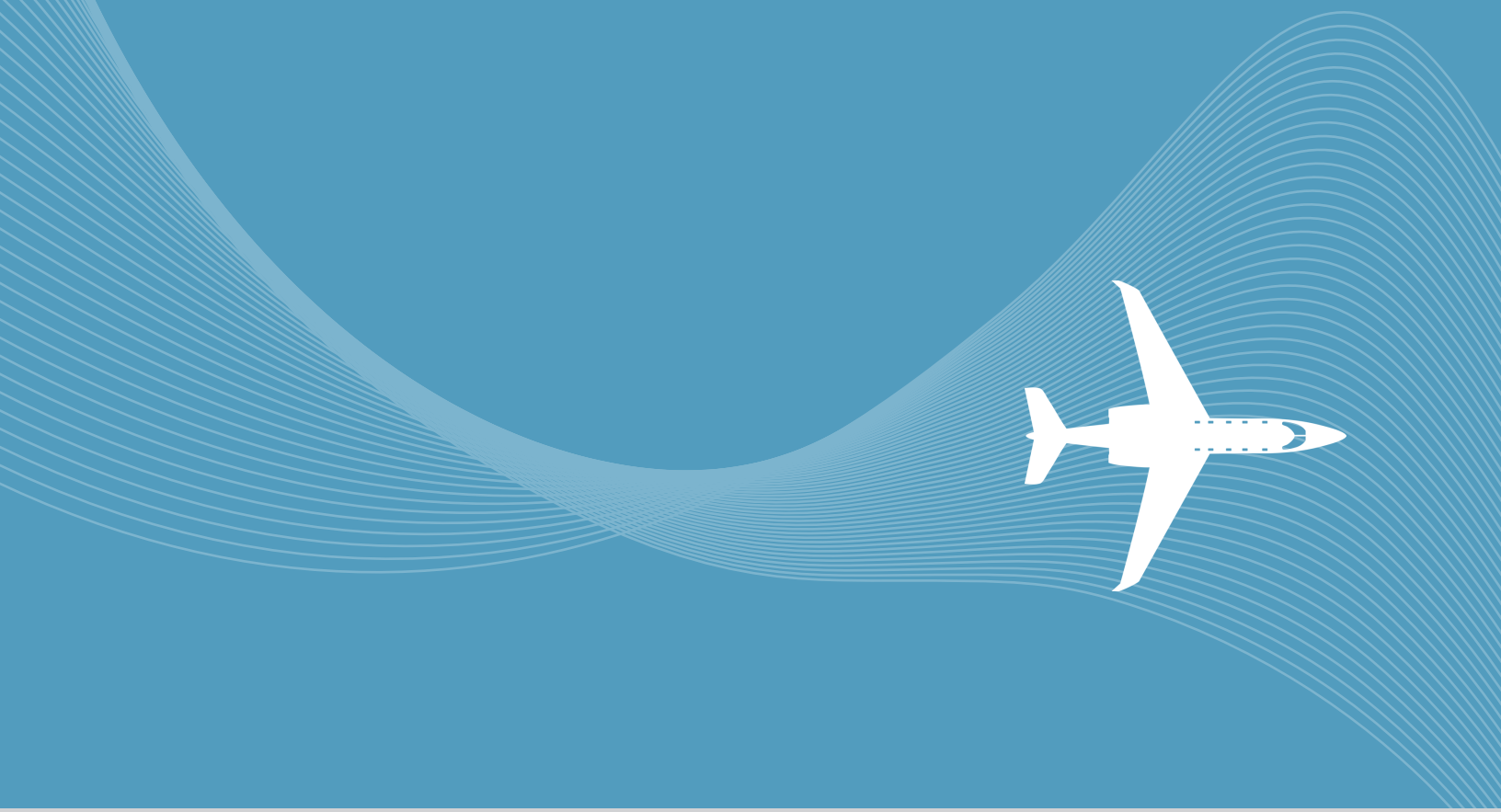
Typical Physical Properties	SK-7348-D32	SK-7348-D60
Size	48" x linear yard	48" x linear yard
Weight	72 oz/sq yard	102 oz/sq yard
Thickness	0.50 in	0.50 in
Color	Dark Grey	Dark Grey
Flammability		
14 CFR 25.853(a) 12-Second Vertical	Passes	Passes
Thermal Conductivity	---------- ≤.279 BTU-IN/Hr -°F/sq ft @ 0.50 in ----------	



SKANDIA

Making Aircraft Quieter, Safer and More Comfortable

Skandia Soundproofing Solutions



Data Dictates Design

By combining engineering analysis with the most effective material available, Skandia delivers significant, qualified soundproofing results.

800/945-7135 • 815/393-4600 • Info@SkandiaInc.com

Aircraft Soundproofing Solutions

A Quiet Aircraft Means a Quiet Journey

The fastest way to judge the quality of an interior completion is by how quiet it is. For over 30 years, Skandia has been listening to what our customers want and then creating acoustics solutions that keep noise and vibration to a whisper. In fact, our sound-proofing solutions are the talk of the aviation industry. You just can't hear it.

Data Dictates Design

In soundproofing engineering, Skandia combines the latest technological advancements and innovations to reduce weight and maximize performance.

Utilizing state-of-the-art equipment, Skandia engineers perform sound frequency tests in order to establish an aircraft's unique acoustical signature while at cruise speed and altitude.

Customized Soundproofing Solutions

Everything you need customized in a single package
In-flight acoustical analysis of your cabin's sound levels to customize the best solution

The solutions starts with the finest materials

- Radiant panel certified thermal & acoustic materials
- Comprehensive selection of aircraft thermal/acoustic materials including insulation strip blankets, overframe blankets and carpet padding
- All Skandia soundproofing solutions meet the radiant panel flammability test for part 25 aircraft, 14 CFR 25.856(a)
- Complete soundproofing systems for more than 80 different aircraft

From a team you can trust

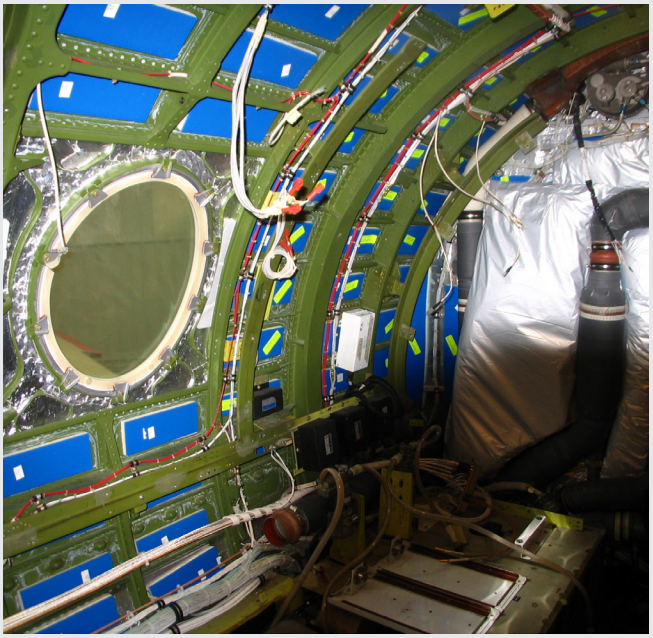
All divisions are supported by an in-house team of DERs and DARs that efficiently respond to our diverse customer base including major OEMs, completion and modification centers, as well as private aircraft owners and upholstery shops.

Don't take our word for it. Our final step in customizing a soundproofing package is to quantify the results with a second sound frequency analysis. The following graphs demonstrate quantified success generating major sound reduction results while adhering to cost, weight and other aircraft-specific parameters and considerations.

Silence starts with Skandia

Take advantage of Skandia's engineered approach and applications experience to meet your noise reduction and comfort goals.

Aircraft Soundproofing Solutions

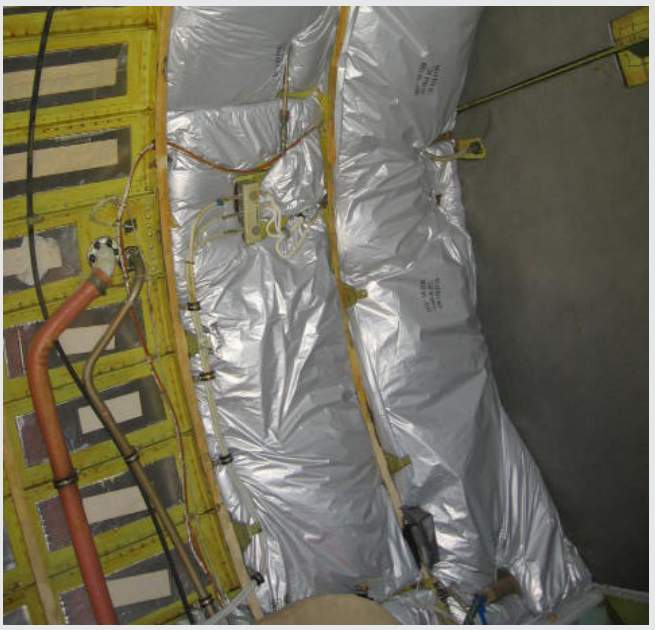


dB(A)

The dB(A) rating scale measures the overall perception of loudness across the entire audible frequency range. This scale is weighted to diminish the value of lower frequencies and therefore, follows closely the frequency response of the human ear to sound.

dB(SIL)

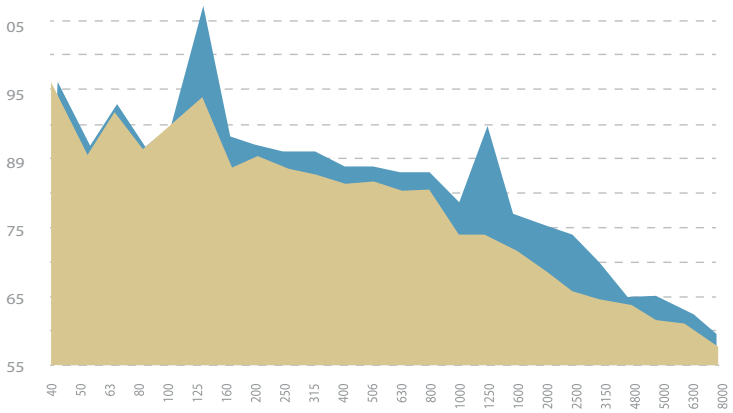
The dB(SIL) rating scale measures the difficulty of hearing speech, averaging the 1000, 2000 and 4000 Hertz frequencies. This scale is indicative of the sound levels that are perceived as most annoying to the human ear.



The dB scale is exponential.
A 3 point reduction is equivalent to a 50% perceived reduction.

Beechcraft

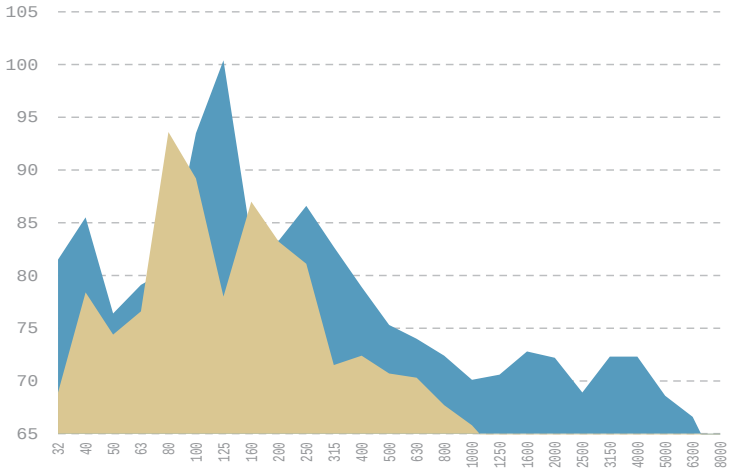
BONANZA A-36



dB(A) Reduction: 7.0
dB(SIL) Reduction: 6.0

Original
Skandia System

KING AIR 200

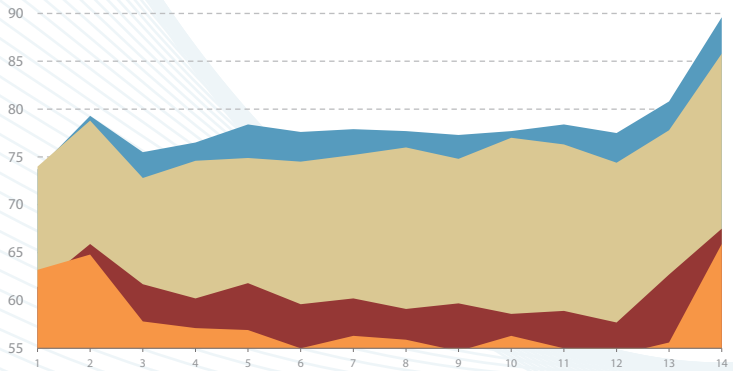


dB(A) Original Insulation: 84.2
dB(A) Skandia System: 70.0
dB(SIL) Reduction: 13.9

Original
Skandia System

Bombardier

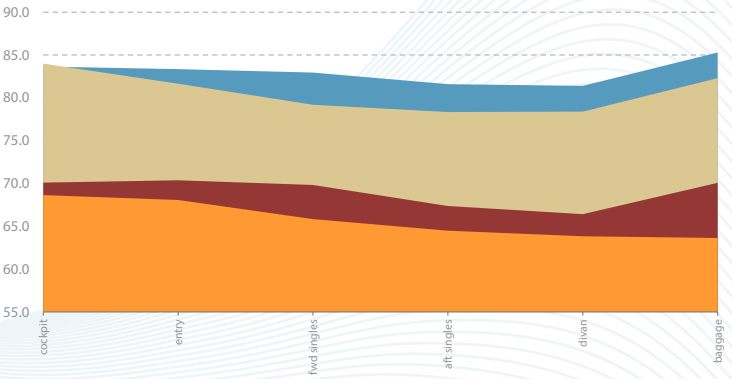
CHALLENGER CL601 FL 37,000 AT .78 MACH



dB(A) Reduction: 2.2
dB(SIL) Reduction: 3.3

dB(A) Original
dB(A) Skandia System
dB(SIL) Original
dB(SIL) Skandia System

LEAR 35 FL 31,000

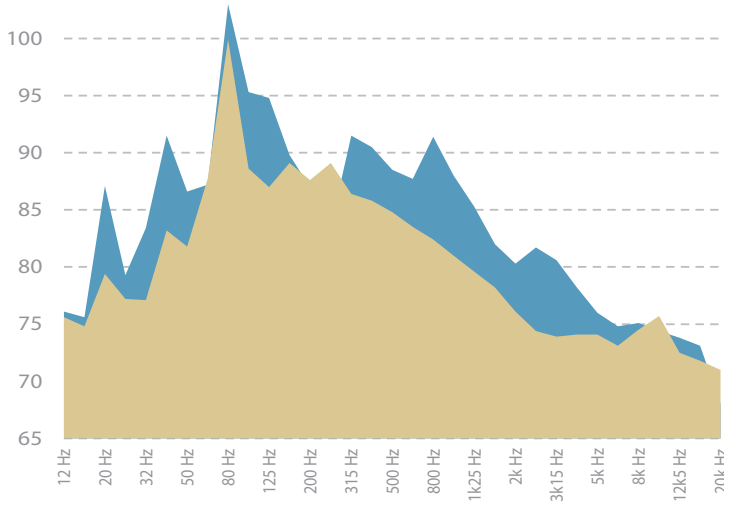


dB(A) Reduction: 2.4
dB(SIL) Reduction: 3.3

dB(A) Original
dB(A) Skandia System
dB(SIL) Original
dB(SIL) Skandia System

Cessna

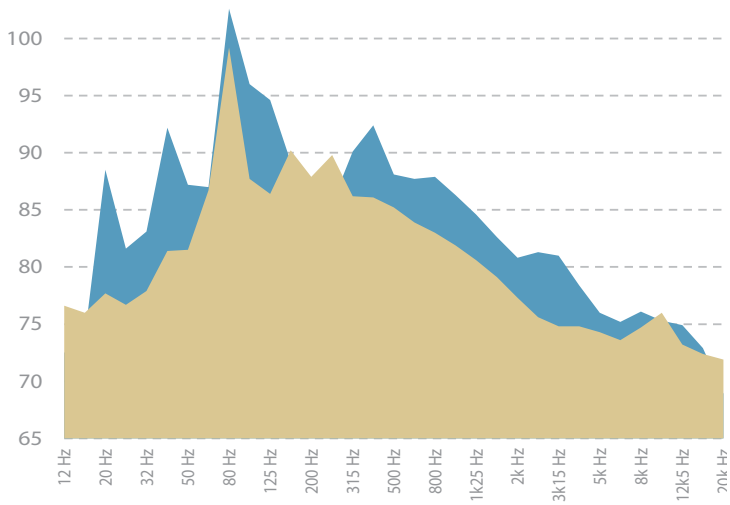
182N COCKPIT FL 6500



dB(A) Reduction: 9.6
dB(SIL) Reduction: 4.9

Original
Skandia System

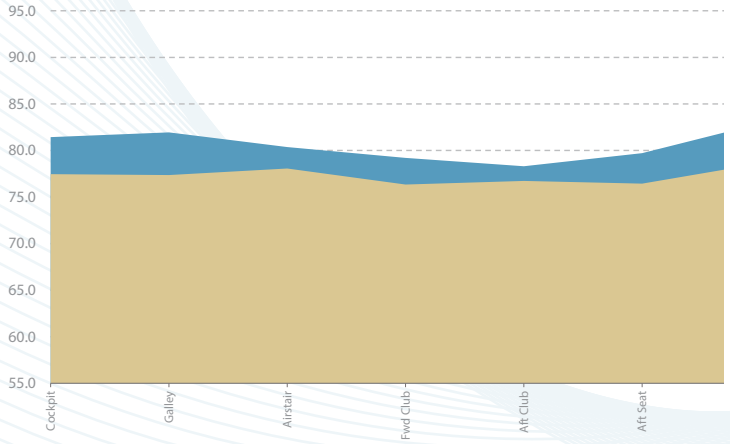
182N COCKPIT FL 7500



dB(A) Reduction: 8.8
dB(SIL) Reduction: 4.0

Original
Skandia System

CITATION 650 FL 28,000 AT .76 MACH

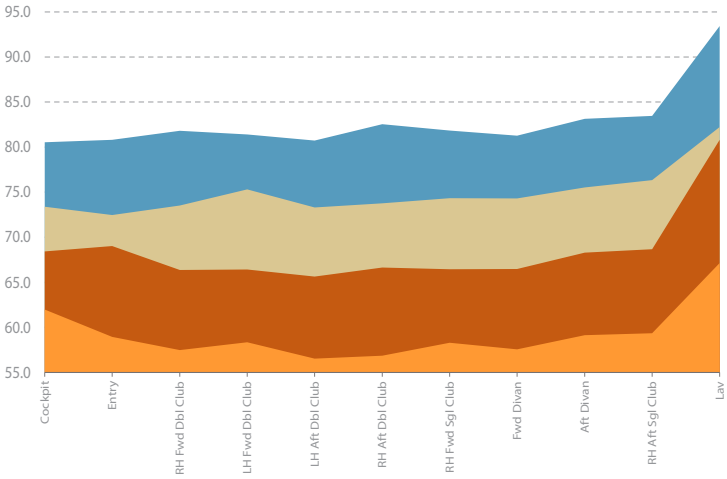


dB(A) Original Insulation: 80.5
dB(A) Skandia System: 77.3
dB(SIL) Original Insulation: 65.3
dB(SIL) Skandia System: 64.3

Original
Skandia System

Dassault

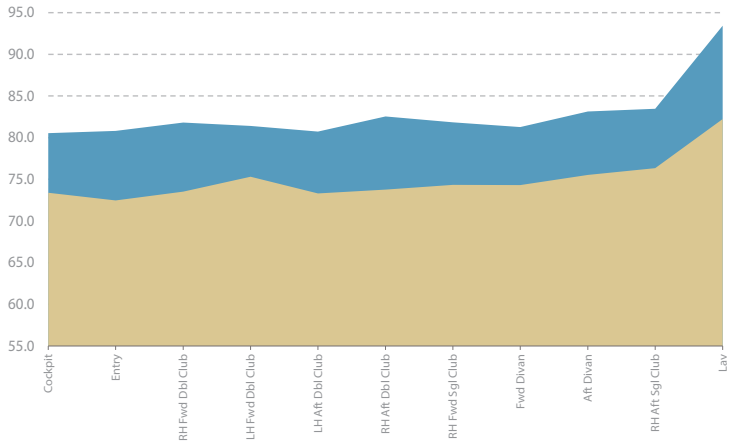
FALCON 20



Original Insulation: 66.9
Skandia System: 57.9
dB(SIL) Reduction: 9.0

- dB(A) Original
- dB(A) Skandia System
- dB(SIL) Original
- dB(SIL) Skandia System

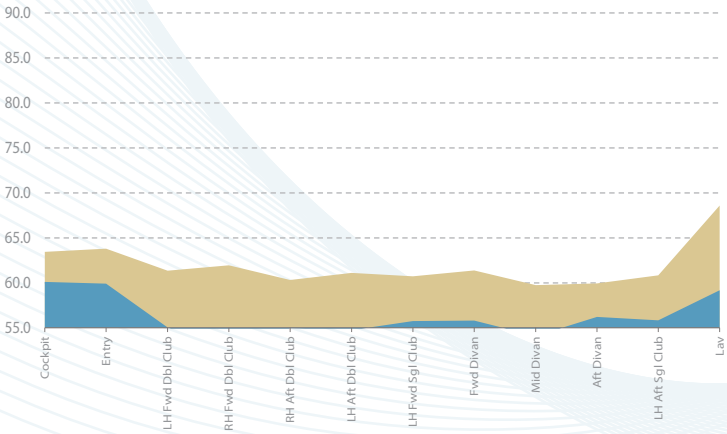
FALCON 50 FL 370 AT .76 MACH



Original Insulation: 77.3 dB
Skandia System: 71.5 dB
dB(A) Reduction: 5.8 dB

- dB(A) Original
- dB(A) Skandia System

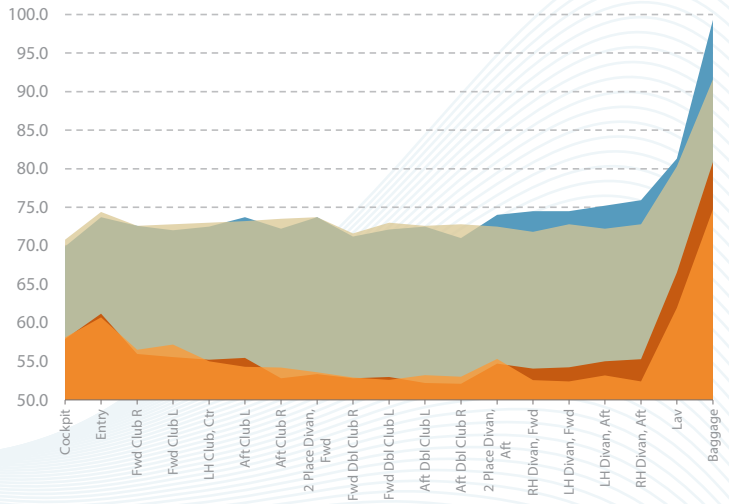
FALCON 50 FL 370 AT .76 MACH



Original Insulation: 61.9 dB
Skandia System: 55.4 dB
dB(SIL) Reduction: 6.5 dB

- dB(SIL) Original
- dB(SIL) Skandia System

FALCON 900EX FL 400 AT .80 MACH

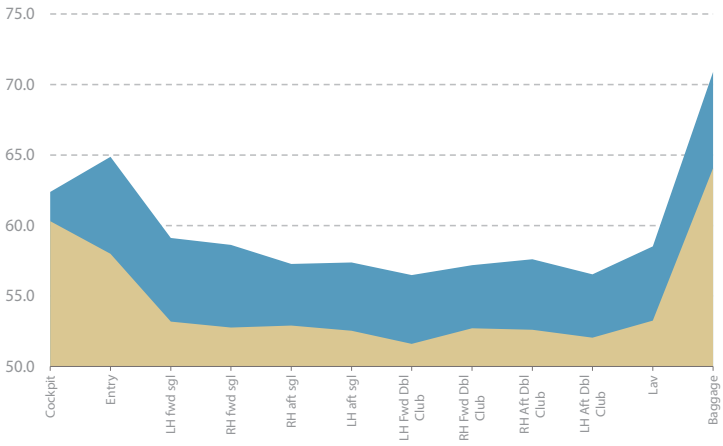


dB(A) Reduction: 2.4
dB(SIL) Reduction: 3.3

- dB(A) Original
- dB(A) Skandia System
- dB(SIL) Original
- dB(SIL) Skandia System

Dassault

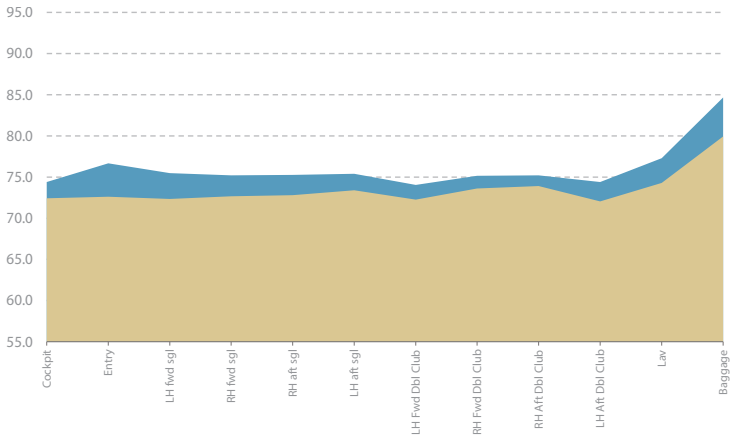
FALCON 2000



Original Insulation:	57.5
Skandia System:	52.5
dB(SIL) Reduction:	5.0

dB(A) Original
dB(A) Skandia System

FALCON 2000 FL 360 AT .85 MACH

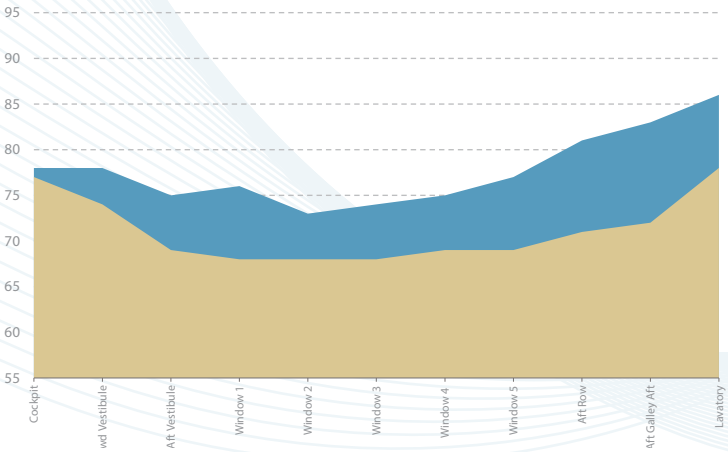


Original Insulation:	75.0
Skandia Insulation:	72.9
dB(A) Reduction:	2.1

dB(A) Original
dB(A) Skandia System

Gulfstream

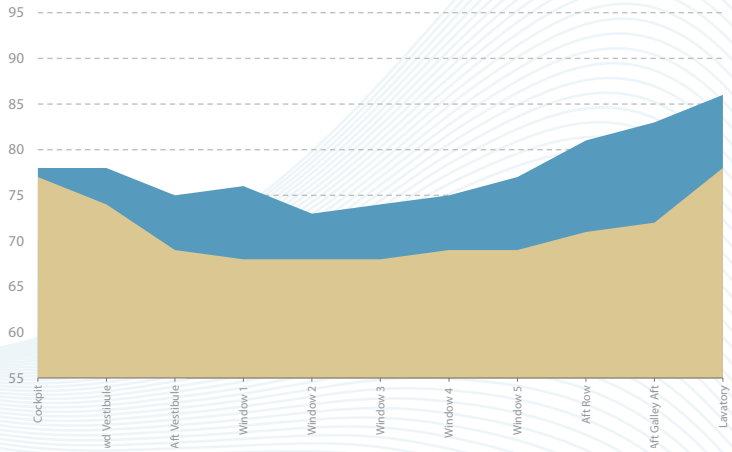
GII dB(A)



Original Insulation:	77.8
Skandia System:	71.2
dB(A) Reduction:	7.6

dB(A) Original
dB(A) Skandia System

GII dB(SIL)

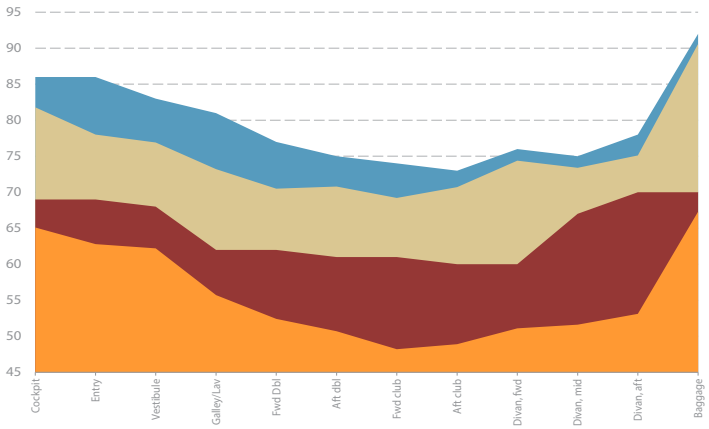


Original Insulation:	64.1
Skandia System:	53.5
dB(SIL) Reduction:	10.6

dB(A) Original
dB(A) Skandia System

Gulfstream

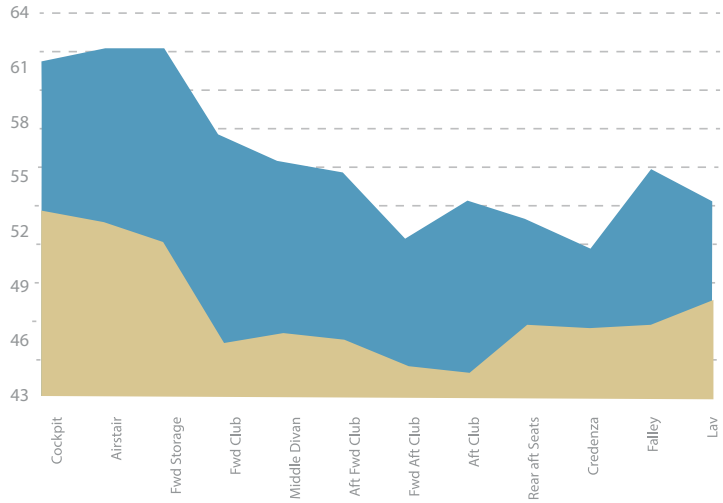
GIII FL 400 AT .80 MACH



dB(A) Original Insulation:	75.4
dB(A) Skandia System:	72.0
dB(A) Reduction:	3.4
dB(SIL) Original Insulation:	63.0
dB(SIL) Skandia System:	50.9
dB(SIL) Reduction:	12.1

- dB(A) Original
- dB(A) Skandia System
- dB(SIL) Original
- dB(SIL) Skandia System

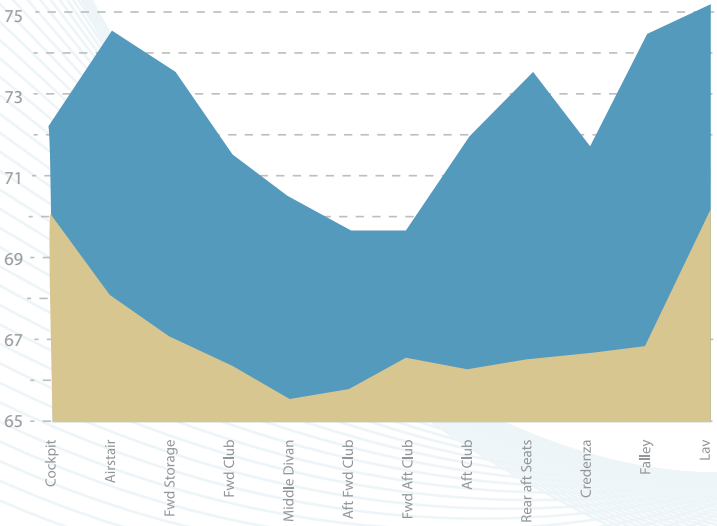
GIV dB(SIL)



Original Insulation:	54.4
Skandia System:	45.7
dB(A) Reduction:	8.7

- Original
- Skandia System

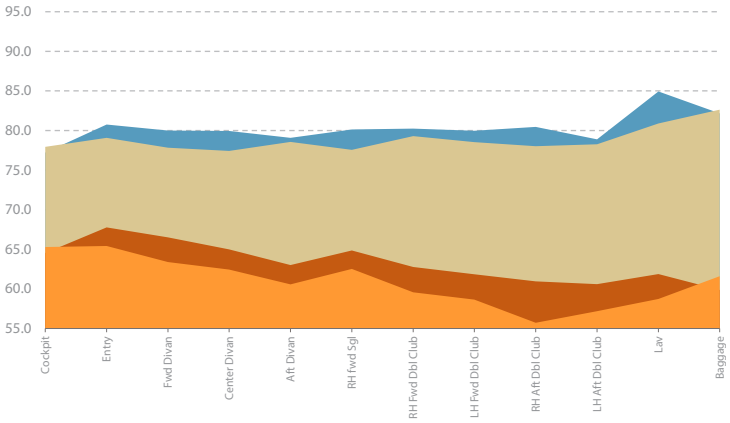
GIV dB(A)



Original Insulation:	71.2
Skandia System:	66.2
dB(A) Reduction:	5.0

- dB(A) Original
- dB(A) Skandia System

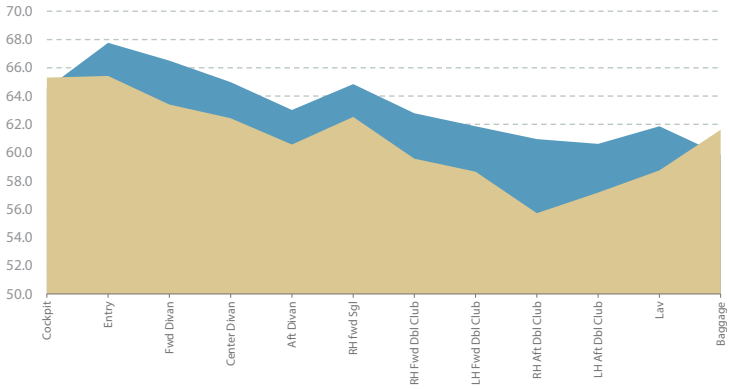
HAWKER 800A



dB(A) Original Insulation:	79.8
dB(SIL) Original Insulation:	63.2
dB(A) Skandia System:	78.3
dB(SIL) Skandia System:	60.0

dB(A) Original
dB(A) Skandia System
dB(SIL) Original
dB(SIL) Skandia System

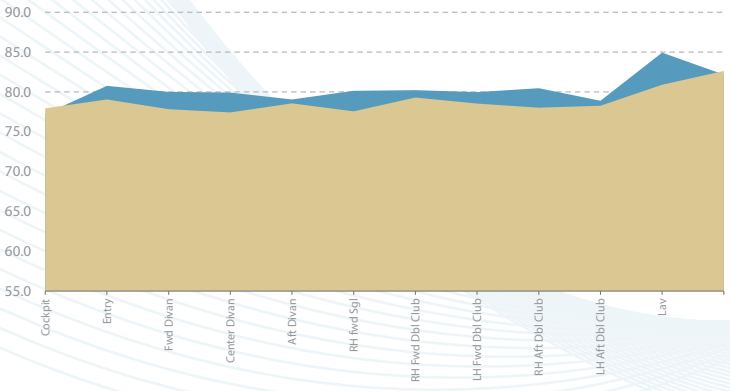
HAWKER 800A dB(SIL) FL 360 AT .76 MACH



Original Insulation:	63.2
Skandia System:	60.0
dB(SIL) Reduction:	3.2

Original
Skandia System

HAWKER 800A dB(A) FL 360 AT .76 MACH

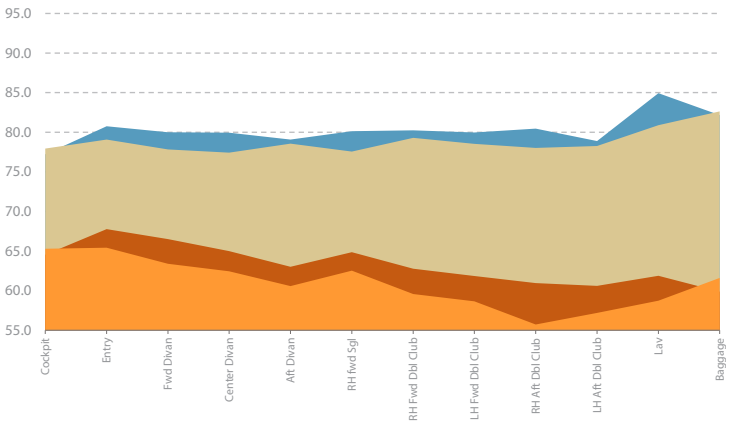


Original Insulation:	79.8
Skandia System:	78.3
dB(A) Reduction:	1.5

dB(A) Original
dB(A) Skandia System

Hawker

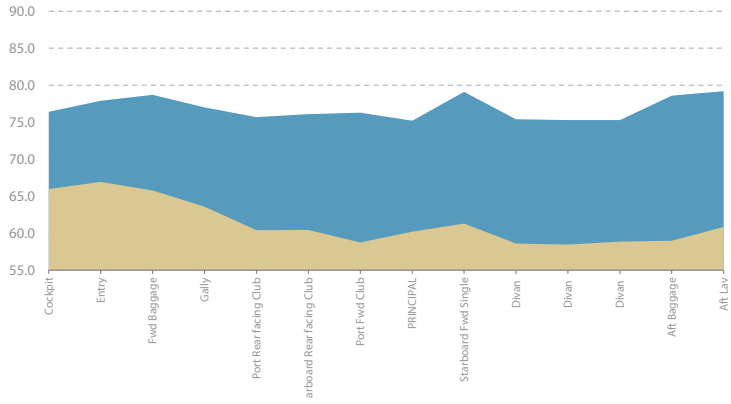
HAWKER 850 SP FL 360 AT .70 MACH



dB(A) Original Insulation:	78.5
dB(SIL) Original Insulation:	63.4
dB(A) EASE System:	76.9
dB(SIL) EASE System:	61.4
dB(A) Reduction:	1.6
dB(SIL) Reduction:	2.0

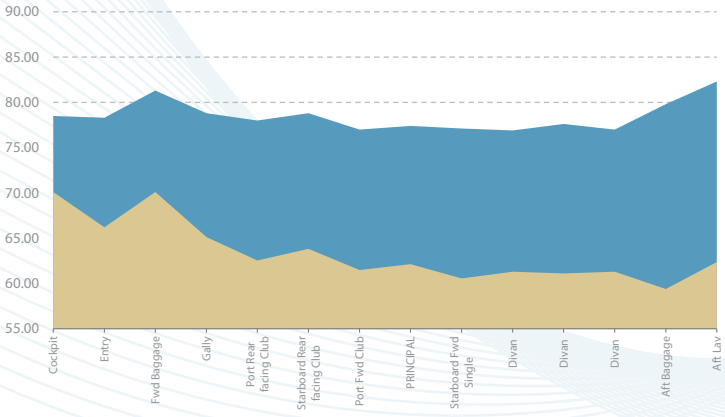
dB(A) Original
dB(A) Skandia System
dB(SIL) Original
dB(SIL) Skandia System

HAWKER 850 SP FL 360 AT .70 MACH



dB(A) Original
dB(A) Skandia System

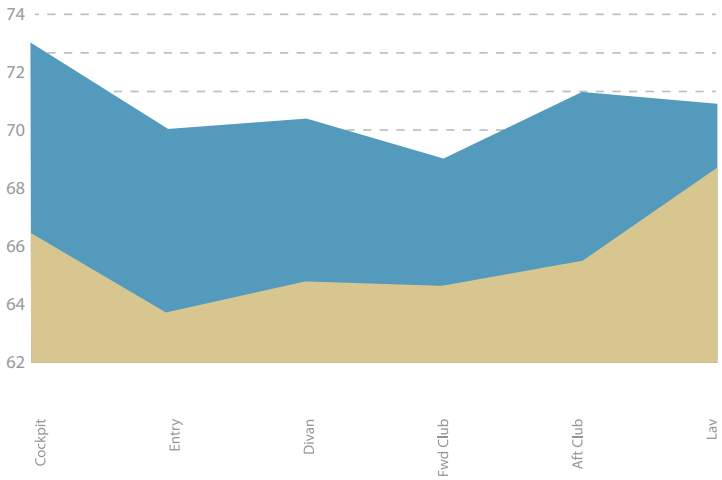
HAWKER 850



dB(A)
dB(SIL)

Israeli Aircraft

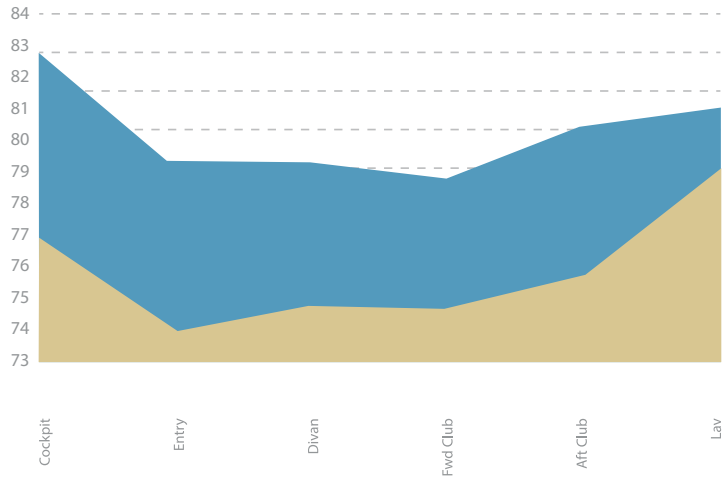
WESTWIND 1124 dB(SIL)



Original Insulation:	70.3
Skandia System:	65.2
dB(SIL) Reduction:	5.1

Original
Skandia System

WESTWIND 1124 dB(A)

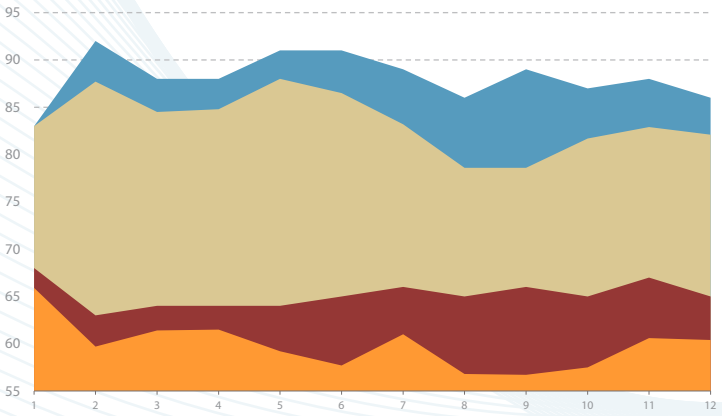


Original Insulation:	79.7
Skandia System:	75.2
dB(A) Reduction:	4.5

Original
Skandia System

Mitsubishi

MU-2 LONG AT FL220

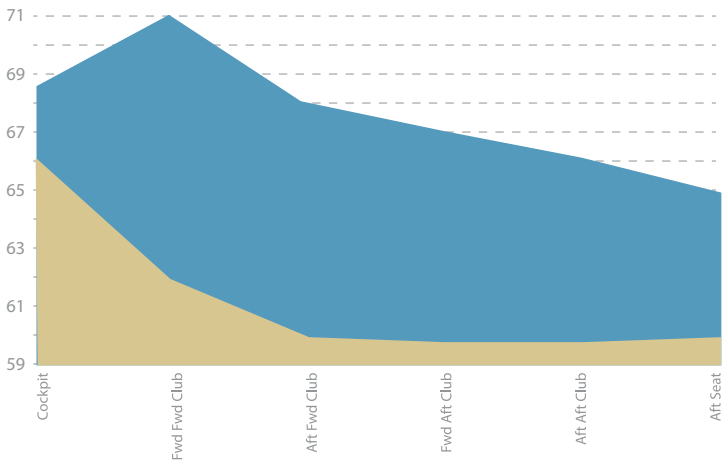


dB(A) Original Insulation:	88.1
dB(A) Skandia System:	83.5
dB(SIL) Original Insulation:	65.4
dB(SIL) Skandia System:	59.9
dB(A) Reduction:	4.6
dB(SIL) Reduction:	5.5

dB(A) Original
dB(A) Skandia System
dB(SIL) Original
dB(SIL) Skandia System

Pilatus

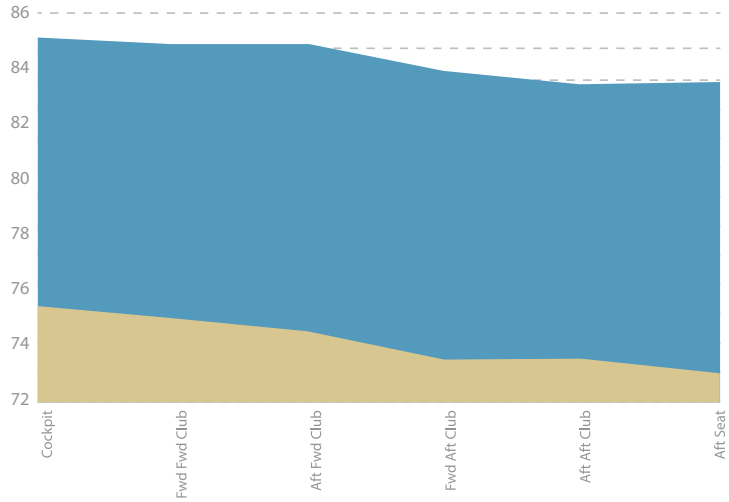
PILATUS PC-12 dB(SIL)



Original Insulation:	67.4
Skandia System:	60.3
dB(SIL) Reduction:	7.1

Original
Skandia System

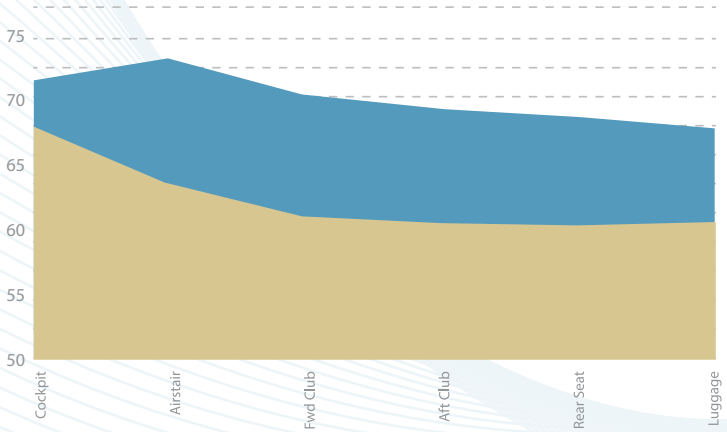
PILATUS PC-12 dB(A)



Original Insulation:	84.2
Skandia System:	73.9
dB(A) Reduction:	10.3

Original
Skandia System

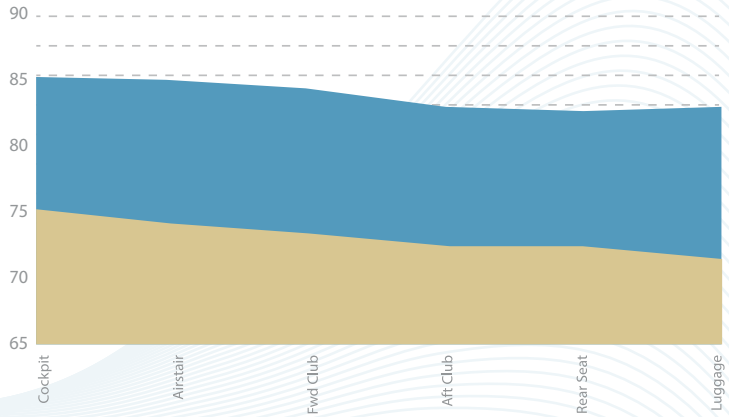
PILATUS PC-12 dB(SIL)



Original Insulation:	67.0
Skandia System:	89.0
dB(SIL) Reduction:	8.0

Original
Skandia System

PILATUS PC-12 dB(A)



Original Insulation:	84.0
Skandia System:	73.0
dB(A) Reduction:	11.0

Original
Skandia System

SKANDIA

FLAMMABILITY TESTING + CERTIFICATION

The Established Leader In FAA-Recognized Flammability Testing Services

Airbus & Boeing

Approved Test Lab

Worldwide OEM Approved

Supplier Status

Skandia's Flammability Testing is performed by highly trained technicians utilizing state-of-the-art equipment. Rapid turnaround times result from our in-house staff of DERs and DARs with the authority to perform conformity inspections and issue 8110-3 flammability certifications.

OUR COMPREHENSIVE CAPABILITIES INCLUDE

14 CFR 25.853(c)

Total Fireblocking Program

14 CFR 25.853(a)

Vertical and Horizontal
12- and 60-Second Composite Panel
Test to Boeing Specifications

14 CFR 25.856(a)

Radiant Panel

OTHER

45° Angle, 14 CFR 25.855(d)
60° Wire, 14 CFR 25.869 and 25.1713(c)

PLUS

Heat Release / Smoke Density / Toxicity Testing
Experienced Staff DERs and DARs
State-of-the-art Equipment
Re-qualify Existing Foam Cushions with New Dress Covers
Test Specimen Fabrication / Conformity Inspection /
8110-3 Approval / Similarity Approvals

5000 North Highway 251, Davis Junction, IL 61020 | 800 945 7135 | www.skandiainc.com

FLAMMABILITY TESTING + CERTIFICATION

Skandia's experience as an aircraft interiors specialist has enabled our insider's understanding of the aircraft refurbishment industry. From this foundation, Skandia has emerged as a high quality supplier delivering products and services in an ASAP environment.

QUALITY ASSURANCE

Our commitment to quality ensures that services are performed accurately and products arrive at our customer's dock on time with required documentation.

TESTING

Quick turnaround with FAA-Approval for flammability testing of aircraft interior materials is achieved by Skandia's experienced staff and sophisticated testing equipment. Full-time personnel include: qualified project coordinators, laboratory technicians and staff DERs and DARs with the authority to perform in-house conformity inspections and issue FAA-approval for a broad range of tests.

FIREBLOCKING CERTIFICATION

Test Plan Generation / Test Cushion Fabrication / Conformity / Inspection
Vertical Flammability on Dress Covers / 8110-3 Approval

BUNSEN BURNER

12- and 60- second Vertical / Horizontal / 45° Angle / 60° Wire

EXPERT CONSULTATION SERVICE AVAILABLE

Test Plans / Seat Design / Similarity Approvals / Composite Panel
Materials selection / OSU + Smoke Emission
Heat Release / Smoke Density / Toxicity Testing

Skandia will write the test plan while the specimens are sent to outside labs for testing. Skandia will need a completed Composite Panel Checklist with appropriate paperwork and test specimens.

5000 North Highway 251, Davis Junction, IL 61020 | 800 945 7135 | www.skandiainc.com

SKANDIA

Making Aircraft Quieter,
Safer and More Comfortable.

Flammability Testing & Certification Services

Skandia strives to create value for our customers through innovation and continuous improvement.

April 2016

Dear Valued Skandia Customer:

This manual is designed to give guidance and understanding of FAA Regulations 14 CFR 25.853 (a), (c) and (d) dealing with Part 25 aircraft seat flammability requirements in layman terms. In addition, we have included guidance for 14 CFR 25.856 and 14 CFR 23.856 testing for thermal/acoustic insulation. This manual is considered guidance material; if you have regulatory questions, please refer them to your local FAA Office. Keep in mind, any materials going into an aircraft will have to meet some form of flammability requirement and that the materials have to be tested in the "as installed state."

Sincerely,

Gary K. Palmer
President

THE RULES
14 CFR 25.853 Compartment Interiors

For each compartment occupied by the crew or passengers, the following apply:

(a) Materials (including finishes or decorative surfaces applied to the materials) must meet the applicable test criteria prescribed in part I of appendix F of this Part, or other approved equivalent methods, regardless of the passenger capacity of the airplane.

(b) Reserved

(c) In addition to meeting the requirements of paragraph (a) of this section, seat cushions, except those on the flight crew member seats, must meet the test requirements of Part II of the appendix F of this Part, or other equivalent methods, regardless of the passenger capacity of the airplane.

(d) Except as provided in paragraph (e) of this section, the following interior compartments of airplanes with passenger capacities of 20 or more must also meet the test requirements of parts IV and V of appendix F of this part, or other approved equivalent method, in addition to the flammability requirements prescribed in paragraph (a) of this section:

(1) Interior ceiling and wall panels, other than lighting lenses and windows;
(2) Partitions, other than transparent panels needed to enhance cabin safety;
(3) Galley structure, including exposed surfaces of stowed carts and standard containers and the cavity of walls that are exposed when a full complement of such carts or containers is not carried; and
(4) Large cabinets and cabin stowage compartments, other than underseat stowage compartments for stowing small items such as magazines and maps.

(e) The interiors of compartments, such as pilot compartments, galleys, lavatories, crew rest quarters, cabinets and stowage compartments, need not meet the standards of paragraph (d) of this section, provided the interiors of such compartments are isolated from the main passenger cabin by doors or equivalent means that would normally be closed during an emergency landing condition.

CLASSIFICATION

SEATS: Seats are manufactured to the Aircraft Type Certificate (TC), Supplemental Type Certificate (STC) or a Technical Standard Order (TSO). The data tag on the seat should clarify which.

TSO-C39 is for 9g seats and the TSO generally only certifies the seat frame.

TSO-C127a is for 16g seats and the TSO certifies the completely upholstered seat and must have 14 CFR 25.853 (c) testing to meet the TSO. TSO-C127a was created by the addition of 14 CFR 25.562 in amendment 25-64. Any part 25 aircraft certified after 6/16/88 requires either 16g seats that meet TSO-C127a or seats meeting 14 CFR 25.562 that are TC to the aircraft.

AIRCRAFT OPERTION

Part 91 Aircraft only require 14 CFR 25.853 (c) if they have 16g seats.

Part 135 Aircraft do require that the seats in these aircraft meet 14 CFR 25.853 (c).

FLAMMABILITY TESTING SERVICES

GUIDANCE MATERIAL

- 14 CFR 25.562
- 14 CFR 25.853
- 14 CFR Part 25 Appendix F Part I and Part II
- Aircraft Materials Fire Test Handbook DOT/FAA/AR-00/12
- Advisory Circular AC 25.853-1 Flammability Requirements for Aircraft Seat Cushions
- Advisory Circular AC 25-17A Transport Airplane Cabin Interiors Crash Worthiness Handbook
- Advisory Circular AC 21-25A Approval of Modified Seating Systems Initially Approved under a Technical Standard Order
- FAA Policy Statement PS-ANM-25.853-01
- FAA Order 8110.113
- FAA Memorandum 97-112-39

CONTACTS

For TSO Seats:

B/E Aerospace
(305) 459-7000

UTC Aerospace Systems
aka Goodrich A/C Seating
(719) 380-0020

UTC Aerospace Systems
aka Decrane Aerospace
(715) 582-4517

Ipeco Holdings
(310) 783-4700
Spares@Ipeco.co.uk

For TC/STC Seats:
Contact the aircraft manufacturer

HIGHLIGHTS

All materials going into an aircraft interior must be tested in the “as installed state.”

Seat armrests, base shrouds, wraparounds, etc. also require flammability testing which Skandia can also perform.

FAA New Policy Statement PS-ANM-25.853-01-R2 “Flammability Testing of Interior Materials”: This policy statement gives guidance on aircraft interior materials for how to qualify and what testing is required.

On aircraft seats that have to meet 14 CFR 25.562, flammability testing is just part of the overall process when reupholstering these seats. It is the modifier’s responsibility to ensure that the seats comply in all aspects before re-installing the seats into the aircraft.

WHAT IS A 16G SEAT AND WHICH AIRCRAFT HAVE THEM?

Any Part 25 Transport category aircraft certified after 1988 is required to have passenger seats that meet TSO-C127a or be Type Certificated with seats that meet SAE 8049A and 14 CFR 25.562

All 16g aircraft seats are certified for use in aircraft as a complete upholstered seat. Any changes to the seat, including upholstery, will affect the aircraft’s certification. Even minor changes, such as changing the leather color, are considered a modification to the seat and its certification.

HOW DO YOU RE-UPHOLSTER 16G SEATS?

First, Skandia suggests that the shop planning on re-upholstering 16g seats contact either the seat manufacturer if the seat has TSO or the aircraft manufacturer if the seat is part of the aircraft type certificate.

If neither is willing to provide guidance, then the FAA Advisory Circular 21-25A “Approval of Modified Seating Systems Initially Approved under a Technical Standard Order” would need to be followed.

FLAMMABILITY TESTING SERVICES

If you have a TSO seat and desire to follow AC 21-25A, Skandia can provide guidance. Skandia has developed a procedure to show compliance to the required regulations for “dress cover only” change.

You may want to contact your FAA FSDO (Flight Standards District Office) or FAA ACO (Aircraft Certification Office) for additional guidance.

Flammability testing will always be required when changing materials, but this is not the only requirement. It is the modifier’s responsibility to ensure that the modified article is approved by the FAA.

KEY STATEMENT FROM ADVISORY CIRCULAR AC 21-25A

AC 21-25A, 4c Modified Seating System Approvals. “Many aircraft owners and operators choose to alter seating systems by incorporating such features as different upholstery. Any changes to these articles constitutes a modification that must be approved by the FAA, regardless of whether the original article had a TSO approval or was approved as part of the aircraft type design. It is the modifier’s responsibility to ensure that the modified article is approved by the FAA. It should be emphasized that replacement of a component of a seat cushion system with a component of a different design constitutes a modification requiring further approval. The local FAA Engineering or Flight Standards District Office should be contacted regarding approval of the modified article and the basis for the approval.”

AIRCRAFT SEATS ARE EITHER MANUFACTURED AND APPROVED BY TECHNICAL STANDARD ORDER (TSO) OR TYPE CERTIFICATE (TC) OF AIRCRAFT (please check seat data tag)

THE FOLLOWING IS A COMPREHENSIVE LIST OF AIRCRAFT THAT HAVE 16G SEATS:

BOMBARDIER	Challenger CL-300 (Continental), Global Express, Global 5000
CESSNA	Citation seats are covered under the aircraft TCDS (Type Certificate Data Sheet) Mustang, Model 510 (Normally Category Part 23) (see TCDS note 4) Citation Excel/XLS, Model 560 (S/N 560-5001 and up) Citation Sovereign, Model 680 Citation X, Model 750 Citation Columbus, Model 850
DASSAULT	2000/2000EX (2000EX EASy and 2000DX are still 2000EX with additional modification packages for marketing designation) 7X
GALAXY AEROSPACE	Astra/Galaxy
GULFSTREAM	G100, G150, G200, G280, Gulfstream V, G450, G550, GVI
HAWKER BEECHCRAFT	4000
LEARJET	40, 45, 70, 75, 85
EMBRAER	135BJ, 145BJ

CAPABILITIES

Skandia's in-house Flammability Testing is performed by highly trained technicians utilizing state-of-the-art equipment. Rapid turnaround times result from our in-house staff of DERs and DARs with the authority to perform conformity inspections and issue 8110-3 flammability certification.

14 CFR 25.853 (a)

- Vertical and Horizontal Testing
- 45 Degree Panel Testing
- 60 Degree Wire Testing
- 12- and 60-Second Composite Panel Testing
- Test to Boeing and Airbus Specifications

14 CFR 25.853 (c)

- Total Fireblocking Test Program

14 CFR 25.853 (d)

- Heat Release
- Smoke Density

14 CFR 25.853 (h)

- Trash Containers

14 CFR 25.856 (a)

- Radiant Panel Testing with DER Certification

PLUS

- Experienced Staff DERs and DARs
- State-of-the-Art Testing Equipment
- Re-qualify Existing Foam Cushions with New Dress Covers
- Test Plan Generation
- Test Specimen Fabrication
- Conformity Inspection
- 8110-3 Approval
- Similarity Approvals

FEATURES & BENEFITS

Skandia's experience as an aircraft interiors specialist has enabled our insider's understanding of the aircraft refurbishing industry. From this foundation, Skandia has emerged as a high quality supplier, delivering products and services in an ASAP environment.

QUALITY ASSURANCE

Our commitment to quality ensures services are performed accurately and products arrive at our customer's dock on time, with the required documentation.

FLAMMABILITY TESTING

Quick turnaround with FAA-approval for flammability testing of aircraft interior materials is achieved by Skandia's staff and sophisticated testing equipment. Full-time personnel include: experienced project coordinators, lab personnel, staff DERs and DARs with the authority to perform in-house conformity inspections and issue FAA-approval for a broad range of tests. Flammability certification is performed quickly and efficiently.

Skandia offers a wide range of Flammability Testing and Certification Services for all aviation needs.

RADIANT PANEL FOR THERMAL/ACOUSTIC INSULATION FREQUENTLY ASKED QUESTIONS

PART 23 AIRCRAFT – RADIANT PANEL TESTING

As of December 2, 2011, the FAA added the requirement for Part 23 aircraft thermal/acoustic materials to meet the radiant panel test requirements. This testing requirement is the same as what has been previously required for Part 25 aircraft. 14 CFR 23.856 Thermal/Acoustic insulation materials states – "Thermal/acoustic materials installed in the fuselage must meet the flame propagation test requirements of part II of Appendix F to this part or other approved equivalent test requirements. This requirement does not apply to "small parts" as defined in 14 CFR 23.853 (d)(3)(v)." [Amdt 23-62, 76 FR 75759, December 2, 2011]

The major difference between the Part 23 14 CFR 23.856 and 14 CFR 25.856(a) is that "Part 23" 23.856 only applies to newly type certificated aircraft which the type design includes Part 23 amendment 23-62. Older Part 23 aircraft are not affected by this new rule. If you are replacing thermal/acoustic insulation, you are not required to meet this rule. This testing is only required for newly type-certificated aircraft that are certified after the December 2, 2011 rule.

The new rule, 14 CFR 23.856, is the same test and requirements as defined in 25.856(a) which is for flame propagation testing. The detailed FAQ questions that follow apply to both 23.856 and 25.856(a).

PART 25 AIRCRAFT – RADIANT PANEL TESTING
As of September 2, 2005, the new FAA standard for Thermal/Acoustic materials used in Transport Category Airplanes went into effect per www.fire.tc.faa.gov/pdf/handbook/00-12_ch24new.pdf. See page 16.

From Part 91 – General Operating and Flight Rules, §91.613 Materials for Compartment Interiors. For transport category airplanes type certificated after January 1, 1958:

- For airplanes manufactured before September 2, 2005, when thermal/acoustic insulation materials are installed in the fuselage as replacements after September 2, 2005, those materials must meet the flame propagation requirements of 14 CFR Part 25.856(a), referred to as Radiant Panel.
- For airplanes manufactured after September 2, 2005, thermal/acoustic insulation materials installed in the fuselage must meet the flame propagation requirements of 14 CFR Part 25.856(a), effective September 2, 2003.

From Part 121 – Operating Requirements: Domestic, Flag and Supplemental Operations §121.312 Materials for Compartment Interiors:

- For airplanes with a passenger capacity of 20 or greater, manufactured after September 3, 2007, thermal/acoustic insulation materials installed in the lower half of the fuselage must meet the flame penetration resistance requirements of 14 CFR Part 25.856, which was later postponed to September 2, 2009.

SUMMARY The FAA extended, by 24 months, the date for operators to comply with the fire penetration resistance requirements of thermal/acoustic insulation used in transport category airplanes manufactured after September 2, 2007. This extension was from September 2, 2007 to September 2, 2009. This action was necessary to allow airframe manufacturers enough time, after getting an acceptable certification test facility, to select and certificate appropriate installations.

For additional information:
www.epa.gov/EPA-IMPACT/2007/January/Day-12/i338.htm

25.856(a) THERMAL/ACOUSTIC INSULATION MATERIALS Thermal/acoustic insulation material installed in the fuselage must meet the flame propagation test requirements of Part VI of Appendix F Part 25, or other approved equivalent test requirements. This requirement does not apply to "small parts," as defined in Part I of Appendix F Part 25.

SUMMARY The FAA has upgraded flammability standards for thermal/acoustic insulation materials used in transport category airplanes. These standards include new flammability tests and criteria that address flame propagation and entry of an external fire into the airplane. This action was necessary because current standards did not realistically address situations in which thermal/acoustic insulation materials contributed to the propagation of a fire.

WHAT KIND OF TEST IS IT? Think of it as a vertical burn test in a toaster oven. Flame is applied for 15 seconds down on the sample which is under a radiant heat source. This test is more demanding than the 12- and 60-second verticals and measures both flame propagation and after flame time.

Per the Advisory Circular, under certain conditions, we are given the latitude to apply the burner flame for 30 seconds or 60 seconds.

As with any test method, there will be good material that for some unknown reason has a slight after flame and does not meet the pass/fail requirements. To reach passing criteria, should any of the initial three specimens fail; a minimum of seven additional specimens may be tested. None of the additional specimens can fail either criterion. In addition, the average of all of the specimens, including the original failed specimen, must meet the pass/fail criteria as called out in AC25.856-1.

WHAT MATERIALS HAVE TO BE TESTED? Thermal/acoustic insulation in the aircraft that cannot be accessed in-flight (entry curtains, under carpet pads do not have to meet this requirement).

Any fiberglass insulation, bagged or not, tapes used to assemble or repair insulation bags, skin damping materials, hook and loop (Velcro) used in the assembly and installation of insulation, sound blankets, or any other materials in the fuselage for thermal/acoustic insulation.

WHAT ABOUT HAVING TO MEET 14 CFR 25.853 (a) and (d)? Thermal/acoustic materials may have to meet additional testing requirements dependent on what they are attached to.

If thermal/acoustic material is glued, adhered, or attached to something that must meet the requirements 14 CFR 25.853, then it will need to be tested as a complete (composite) build-up as installed to 14 CFR 25.853(a) and (d).

14 CFR 25.853(a) is the Vertical Burn requirement. If the aircraft has 20 or more seats, then it would also have to meet 14 CFR 25.853(d) is the Heat Release and Smoke and Toxicity requirement.

DOES EXISTING MATERIAL HAVE TO BE REPLACED? No, only new materials being installed after September 2, 2005 have to meet this requirement. Aircraft do not have to be retrofitted.

WHAT AIRCRAFT ARE AFFECTED? Aircraft that were built to CFR Part 25 requirements (includes commercial airliners, larger corporate aircraft, etc.).

WHAT INFORMATION IS NEEDED FOR TESTING TO 14 CFR 25.856(a)? A checklist can be downloaded from our website at SkandiaInc.com in the Forms and Checklists section. Specimen size is 12.5" x 23" for flexible materials; 11.5" x 23" for rigid materials and 4" x 12" for hook and loop fasteners. Three specimens are required for each test.

TESTING OF TAPE A separate procedure has been developed to show compliance for the use of tape.

Each type of tape requires qualification on each material on which it is used.

If tape is to be tested, please follow specimen fabrication of draft Advisory Circular 25.856-1 on the Fire Tech Center website www.fire.tc.faa.gov and later revisions.

TESTING OF HOOK AND LOOP FASTENERS
A test procedure has been developed to simplify the certification process for hook and loop fasteners (Velcro).

Hook and loop specimens are tested as mated components. Specimen sizes are 4" x 12". Three specimen of each are required.

If hook and loop fastener (Velcro) is to be tested, please follow specimen fabrication of draft Advisory Circular 25.856-1 on the Fire Tech Center website www.fire.tc.faa.gov and later revisions.

WHO HAS TO COMPLY?
Anyone installing or changing thermal/acoustic insulation after September 2, 2005 and aircraft manufacturers building new aircraft after September 2, 2005 must comply with the regulations.

CAN I GET AN FAA 8110-3 FORM FOR THIS TEST? An FAA Form 8110-3 can be issued for aircraft specific for U.S. registered or U.S. State of Design aircraft when a burn test is in support of an FAA project or in support of a major repair or alteration. Many of the thermal/acoustic insulation materials are used in combinations and must be tested in a composite build-up form. In this case Skandia can provide a test plan for the materials or accept customer conformed specimens for testing.

COMPOSITE PANEL TESTING FREQUENTLY ASKED QUESTIONS

COMPOSITE PANEL BURN TESTING AND WHY IT IS REQUIRED Single element vertical burn tests do not meet all of the requirements for installing materials in aircraft or on aircraft seating. The following is a look at the rule and details on what is required, though each FAA Flight Standard District Office or Aircraft Certification Office may have slight variations or interpretation. This information is for guidance only and any specific questions should be directed to your local FAA FSDO or ACO office. Additional reference materials are Advisory Circulars AC 25.853-1, AC 21-25A, AC 23-2 and Aircraft Materials Fire Test Handbook DOT/FAA/AR-00/12.

THE RULE §25.853 COMPARTMENT INTERIOR
For each compartment occupied by the crew or passengers, the following apply: Materials (including finishes or decorative surfaces applied to the materials) must meet the applicable test criteria prescribed in Part I of Appendix F of this part, or other approved equivalent methods,

regardless of the passenger capacity of the airplane.

WHAT AND HOW IS IT TO BE COMPLIED WITH Appendix F to Part 25?

Part I – Test Criteria and Procedures for Showing Compliance with §25.853, or §25.855 (a) Material test criteria – (1) Interior compartments occupied by crew or passengers.

(i) Interior ceiling and wall panels, partitions, galley structure, large cabinet walls, structural flooring, and materials used in the construction of stowage compartments (other than under-seat stowage compartments and compartments for stowing small items such as magazines and maps) must be self-extinguishing when tested vertically in accordance with the applicable portions of Part I of this appendix. The average burn length may not exceed 6 inches and the average flame time after removal of the flame source may not exceed 15 seconds. Drippings from the test specimen may not continue to flame for more than an average of 3 seconds after falling. (60-second burn)

(ii) Floor covering, textiles (including draperies and upholstery), seat cushions, padding, decorative and non-decorative coated fabrics, leather, trays and galley furnishings, electrical conduit, air ducting, joint and edge covering, liners of Class B and E cargo or baggage compartments, floor panels of Class B, C, D or E cargo or baggage compartments, cargo covers and transparencies, molded and thermo-formed parts, air ducting joints, and trim strips (decorative and chafing), that are constructed of materials not covered in subparagraph (iv) below, must be self-extinguishing when tested vertically in accordance with the applicable portions of Part I of this appendix or other approved equivalent means. The average burn length may not exceed 8 inches, and the average flame time after removal of the flame source may not exceed 15 seconds. Drippings from the test specimen may not continue to flame for more than an average of 5 seconds after failing. (12-second burn)

(iv) Clear plastic windows and signs, parts constructed in whole or part of elastomer materials, edge lighted instrument assemblies consisting of two or more instruments in a common housing, seat belts, shoulder harnesses, and cargo and baggage tie-down equipment, including containers, bins, pallets, etc., used in passenger or crew compartments, may not have an average burn rate greater than 2.5 inches per minute when tested horizontally in accordance with the applicable portions of this appendix. (horizontal)

(v) Except for small parts (such as knobs, handles, rollers, fasteners, clips, grommets, rub strips, pulleys, and small electrical parts) that would not contribute significantly to the propagation of a fire and for electrical wire and cable insulation, materials in items not specified in paragraphs (a)(1)(i), (ii), (iii), or (iv) of part I of this appendix may not have a burn rate greater than 4.0 inches per minute when tested horizontally in accordance with the applicable portions of this appendix. (horizontal)

(b) Test Procedures–(2) Specimen configuration Except for small parts and electrical wire and cable insulation, materials must be tested either as section cut from a fabricated part as installed in the airplane or as a specimen simulating a cut section, such as a specimen cut from a flat sheet of the material or a model of the fabricated part. The specimen may be cut from any location in a fabricated part; however, fabricated units, such as sandwich panels, may not be separated for test. Except as noted below, the specimen thickness must be no thicker than the minimum thickness to be qualified for use in the airplane. Test specimens of thick foam parts, such as seat cushions, must be ½-inch in thickness. Test specimens of materials that must meet the requirement of Paragraph (a)(1)(v) of Part I of this appendix must be no more than 1/8-inch in thickness.

Electrical wire and cable specimens must be the same size as used in the airplane. In the case of fabrics, both the warp and fill direction of the weave must be tested to determine the most critical flammability condition. Specimens must be mounted in a metal frame so that the two long edges and the upper edge are held securely during the vertical test prescribed in subparagraph (4) of this paragraph and the two long edges and the edge away from the flame are held securely during the horizontal test prescribed in subparagraph (5) of this paragraph. The exposed area of the specimen must be at least 3 inches wide and 12 inches long, unless the actual size used in the airplane is smaller. The edge to which the burner flame is applied must not consist of the finished or protected edge of the specimen but must be

representative of the actual cross-section of the material or part as installed in the airplane. The specimen must be mounted in a metal frame so that all four edges are held securely and the exposed area of the specimen is at least 8 inches during the 45-degree test prescribed in subparagraph (6) of this paragraph.

I THOUGHT THAT 14 CFR 25.853(c) "THE OIL BURN TEST" TOOK CARE OF THE FLAMMABILITY TESTING FOR AIRCRAFT SEATS? 14 CFR 25.853(c) is for the seat cushions (backrest, bottom cushion, footrest, and headrest). It was developed for what was considered large volumes of foam. Seat armrest, base shrouds, back shell, etc. have to meet 14 CFR 25.853(a)(ii) or the 12-second vertical burn requirements as installed in the aircraft.

SO FOOTRESTS AND HEADRESTS HAVE TO MEET 14 CFR 25.853(C) EVEN IF THEY HAVE NO FOAM OR A VERY SMALL AMOUNT? Footrests and headrests that are made up of substrate and dress cover only would have to be tested to 14 CFR 25.853(a)(ii) as a composite assembly. If there are any other components, the assembly would have to be burned to 14 CFR 25.853 (c).

DO ARMRESTS, BASE SHROUDS, BACK SHELLS, ETC. HAVE TO BE TESTED EVEN THOUGH I HAD THE TEST DONE ON THE DRESS COVER MATERIAL? Seat components that are upholstered such as armrests, shrouds, back shells, etc. have to be tested in the "as installed state" which includes substrate, foams, glues, dress cover material, etc. to the test requirements of 14 CFR 25.853 (a)(ii), which are the 12-second vertical burn requirements.

I'M JUST REPLACING THE DRESS COVER MATERIAL ON THE HEADLINER SO CAN'T I JUST USE SINGLE ELEMENT VERTICAL BURN TEST RESULTS FOR THAT? No, you will need to test the completed build-up in the "as installed state" which would include all materials that make up the headliner panel such as the dress cover, foam, glue and substrate material that makes up the headliner. Some FSDO will let you fabricate surrogate panels to replicate the substrate panel or foam, some will not. Those that won't may require samples to be cut from the part to be tested. You will have to get guidance from your FSDO. Headliners, window liners, and sidewalls all have to be tested to 14 CFR 25.853(a)(i) 60-second vertical test.

WHAT IF I CANNOT PROVIDE THE SUBSTRATE AND THE FSDO/ACO WON'T LET ME USE A SURROGATE? You would need to cut enough material from existing panels to perform the testing and then make a repair to replace what was used. Flammability testing would then be required for the repair.

WHAT IF I HAVE THE SAME MATERIAL COMBINATIONS BUT IN DIFFERENT THICKNESSES, DO I HAVE TO TEST THEM ALL? Per 14 CFR Appendix F Part 1(b)(2) "Except as noted below, the specimen thickness must be no thicker than the minimum thickness to be qualified for use in the airplane. Test specimens of thick foam parts, such as seat cushions, must be ½-inch in thickness. Test specimens of materials that must meet the requirements of Paragraph (a)(1)(v) of Part I of this appendix must be no more than 1/8-inch in thickness. Electrical wire and cable specimens must be the same size as used in the airplane. In the case of fabrics, both the warp and fill direction of the weave must be tested to determine the most critical flammability condition." (This is only for Part I burns.) For further clarification, please see FAA Policy Statement PS-ANM-25.853-01.

WHAT ABOUT CABINETRY AND BULKHEADS? Cabinetry, bulkheads, and any large structures have to meet the requirements of 14 CFR 25.853(a)(i) 60-second vertical testing. This would include the cabinet structure, along with decorative finish as installed in the aircraft.

WHAT HAS TO BE TESTED IF WE ARE JUST CHANGING THE FINISH? Any time you are refinishing cabinetry, composite testing is required. This testing would have to include the cabinet structure, materials being added, glues used to attach, any finish material such as stains, paints, clear coat, etc. We would need to know the process specifications and material used, plus the mixing ratios for paints and stains. Some FSDO will let you fabricate surrogate panels to replicate the substrate panel or foam, some will not. Those that won't may require samples to be cut from the part to be tested. You will have to get guidance from your FSDO.

WHAT ABOUT SIMILARITY TESTING FOR CABINETRY IN DIFFERENT AIRCRAFT? Skandia's policy is not to do any similarities for different aircraft as substrate material, mix ratios and veneers can vary.

CAN I JUST GET AN FAA 8110-3 FOR STOCK SO THAT I CAN USE THE MATERIAL OR COMPOSITE IN MANY DIFFERENT AIRCRAFT? No, an FAA form 8110-3 can only be issued aircraft specific for U.S. registered or U.S. State of Design aircraft. An 8110-3 can only be issued when a burn test is in support of an FAA project or in support of a major repair or alteration. An authorized DER must know how the material or part will be installed on an end product and identify that use on the FAA form 8110-3. DER's must follow order 8110.113 when issuing an 8110-3.

FLAMMABILITY CERTIFICATION OF DYNAMIC CERTIFIED SEATS FREQUENTLY ASKED QUESTIONS

Seats manufactured to meet Dynamic test criteria have additional requirements or restrictions. These seats would have been manufactured to either TSO C127A or 14 CFR 25.562. It is the responsibility of the upholsterer/fabricator to ensure that the work performed is compliant with the original certification. These seats are dynamically certified as an assembly which includes the detailed foam construction and dress cover. Any changes can affect the certification.

HOW DO I KNOW IF A SEAT IS DYNAMICALLY CERTIFIED? In order to determine what the seat is certified to, we suggest you inspect the seat frames for TSO tags and also review the aircraft Type Certificate Data Sheet (TCDS).

WHAT IF THERE IS NO TSO TAG ON THE SEAT? You should review the TCDS and/or aircraft equipment list to verify the correct seat is installed. Some aircraft manufacturers include the dynamic seat approval on the aircraft Type Certificate (TC). In this case, there may not be a TSO tag on the seat, however, the seat could be dynamic certified and you should contact the aircraft manufacturer for guidance.

Additionally, Advisory Circular AC21-25A provides guidance utilizing a DER with 14 CFR 25.562 authorization to generate acceptable data that the work can be performed in accordance with.

HOW DO I PERFORM RE-UPHOLSTERY AND SHOW FAA-COMPLIANCE? In general, FAA-compliance can be separated into two categories:

1) **Upholstery Practices and Build-ups.** The upholstery/foam build-ups must be performed in accordance with approved data. Contact the TSO holder or aircraft manufacturer for guidance.

2) **Flammability.** Flammability Testing and Certification is similar to non-dynamic seats and can be performed by Skandia. Skandia DERs are authorized to generate acceptable data for Flammability only.

Skandia, Inc. tests combinations of materials to show compliance to 14 CFR 25.853(c). Skandia does not approve production.

Additional testing of seat components is required to show compliance when seat armrest, wraparound shrouds, base shrouds, etc. are upholstered. These items need to comply with 14 CFR 25.853 (a) Appendix F Part I (a)(I)(ii) per the installed configuration, i.e., composite panels.

Headrests and leg rests are required to meet the requirements of 14 CFR 25.853(c) as called out in Advisory Circular AC 25.853-1.

For Flammability testing that is not performed under an FAA Project (FAA Project Number) or has FAA Request for Conformity, Skandia's Quality department will perform a company conformity inspection.

Additional reference material:

- Advisory Circular AC 25.853-1
- Advisory Circular AC 21-25A
- Advisory Circular AC 25-17
- Technical Standard Order TSO-C127a
- Technical Standard Order TSO-C39b
- Aircraft Materials Fire Test Handbook DOT/FAA/AR-00/12

This information can be found either on the FAA website, www.faa.gov or on the FAA Fire Tech Center website, www.fire.tc.faa.gov

Skandia, Inc. offers this information only as guidance.

TSO-C127a DYNAMIC SEATS

14 CFR 25.562 became effective May 17, 1988 (Amendment 25-64) requiring dynamic testing of seats. These requirements incorporate the foam cushion build-ups and dress cover materials as an integral part of the seat certification. Upholstery and foam build-ups cannot deviate from the original configuration without an approval process, typically controlled by the TSO holder or aircraft manufacturer.

TSO-C39c NON-DYNAMIC CERTIFIED SEATS

The certification for TSO-C39c seats is limited to the seat structure and does not incorporate the foam build-up and dress cover materials. These seats can be re-upholstered without interaction of the TSO holder or aircraft manufacturer.

HEAT RELEASE AND SMOKE DENSITY REQUIREMENTS FREQUENTLY ASKED QUESTIONS

For Part 25 aircraft at Amendment 25-61 (8/20/1986), the FAA developed the following requirements for Heat Release:

"(a-1) For aircraft with a passenger capacity of 20 or more, interior ceiling and wall panels (other than light lenses), partitions, and outer surface galleys, large cabinets and stowage compartments (other than underseat stowage compartments and compartments for stowing small items, such as magazines and maps) also must meet the test requirements of Part IV of Appendix F of this Part, or other approved equivalent method, in addition to the flammability requirements prescribed in paragraph (a) of this section."

For Part 25 aircraft at Amendment 25-66 (9/26/1988), aircraft must meet the requirement of Part V for Smoke Density.

These requirements only apply to aircraft with a capacity of 20 or more passengers.

Are the heat release and smoke density requirements applicable to seats?

The pre-amble of rule 25.853 exclude seats from the requirements of Part IV and Part V. However, with the invention of larger seats with integral stowage compartments and other console assemblies, the FAA has issued additional guidance.

On October 17, 1997, the FAA issued Memorandum 97-112-39 "Guidance for Flammability Testing of Seat/Console Installations." This document provide guidance as to when Heat Release and Smoke Density testing is required for aircraft seating, with capacity of 20 or more passengers.

FIREBLOCKING CHECKLIST:

The following is the Seat Fireblocking Checklist and completion details. All information is very important for the development of a Flammability Test Plan. Please take the time to review each section as you are completing the checklist so that we receive complete and accurate information.

1. Company Name requesting the work.

2. Contact Name: Point of contact.

3-5. Phone/Fax/Email to contact #2.

6. Date Sent: Date complete checklist is submitted.

7. PO#: Purchase Order that Skandia is to reference for this work.

8. A/C Completion Date: The date the aircraft is to be delivered.

9. Aircraft Make: Enter the aircraft make as listed on the type certificate data sheet.

10. Aircraft Model: Enter either the aircraft model series or the specific aircraft model number, as appropriate and as listed on the type certificate data sheet.

11. S/N#: Aircraft serial number.

12. Tail#: The registration number of the aircraft. (If the aircraft is not United States Registered or United States State of Design, an 8110-3 cannot be issued unless it is an FAA project).

13. Test Data is in support of how the aircraft is being returned to service. If Skandia is fabricating the test specimens, an FAA form 8130-9 will need to be issued and signed. Authorization from you, the customer, will allow Skandia to sign the Statement of Conformity on your behalf.

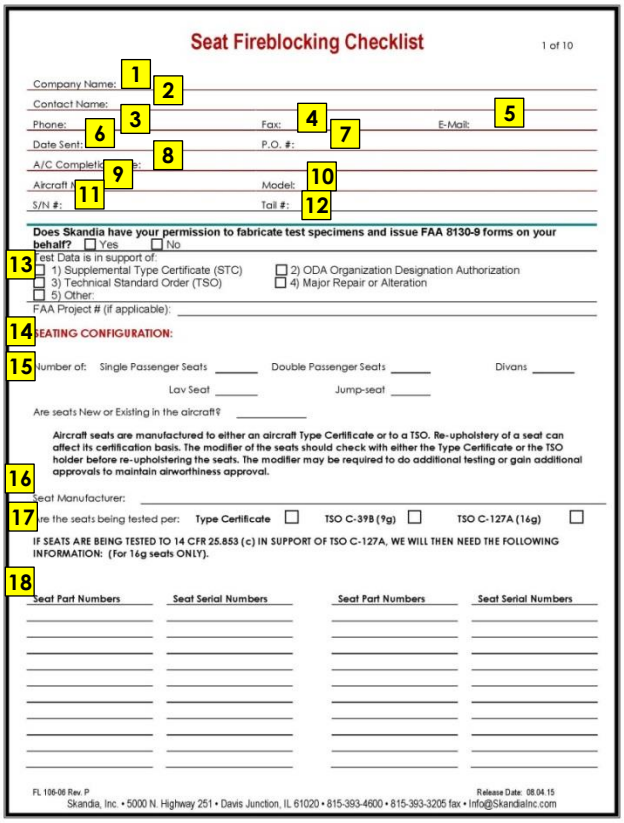
14. FAA Project#: If testing is performed for either a Supplemental Type Certificate or Organization Designation Authorization, we require the FAA Project number and FAA Aircraft Certification Office involved with the project.

15. Skandia needs to know how many seats/divans/lav/jumpseats are being produced for inclusion in this test plan.

16. Please list the seat manufacturer as this helps us to better understand the testing that may be required.

17. We need to understand if the seats are being tested to comply with a TC/STC, a TSO or neither.

18. If the seats are being tested to support TSO C-127, we need the model number and serial number of each seat. This information can be found on the seat's data tag.



Seat Fireblocking Checklist

1 of 10

Company Name: 1 2

Contact Name:

Phone: 6 3 Fax: 4 7 E-Mail: 5

Date Sent: P.O. #:

A/C Complet 8 e:

Aircraft 9 Model: 10

S/N #: 11 Tail #: 12

Does Skandia have your permission to fabricate test specimens and issue FAA 8130-9 forms on your behalf? ☐ Yes ☐ No

13 Test Data is in support of:

☐ 1) Supplemental Type Certificate (STC) ☐ 2) ODA Organization Designation Authorization

☐ 3) Technical Standard Order (TSO) ☐ 4) Major Repair or Alteration

☐ 5) Other:

FAA Project # (if applicable):

14 SEATING CONFIGURATION:

15 Number of: Single Passenger Seats _____ Double Passenger Seats _____ Divans _____

Lav Seat _____ Jump-seat _____

Are seats New or Existing in the aircraft? _____

Aircraft seats are manufactured to either an aircraft Type Certificate or to a TSO. Re-upholstery of a seat can affect its certification basis. The modifier of the seats should check with either the Type Certificate or the TSO holder before re-upholstering the seats. The modifier may be required to do additional testing or gain additional approvals to maintain airworthiness approval.

16 Seat Manufacturer:

17 Are the seats being tested per: Type Certificate ☐ TSO C-39B (9g) ☐ TSO C-127A (16g) ☐

IF SEATS ARE BEING TESTED TO 14 CFR 25.853 (c) IN SUPPORT OF TSO C-127A, WE WILL THEN NEED THE FOLLOWING INFORMATION: (For 16g seats ONLY).

18

Seat Part Numbers	Seat Serial Numbers	Seat Part Numbers	Seat Serial Numbers

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19. All components of a seat must also meet the requirements of 14 CFR 25.853 (a)(ii) 12-second vertical burn test as a composite representing the actual build-up. Skandia can perform this additional testing.

20. Copies of all packing lists or invoices are required for each material used within the seat upholstery. Without traceability, conformity cannot be performed and test specimens will not be burned.

21. Skandia requires production drawings or a sketch of what the production cushion foam build-up will be in each of the different components, including; back, bottom, headrest or legrest.

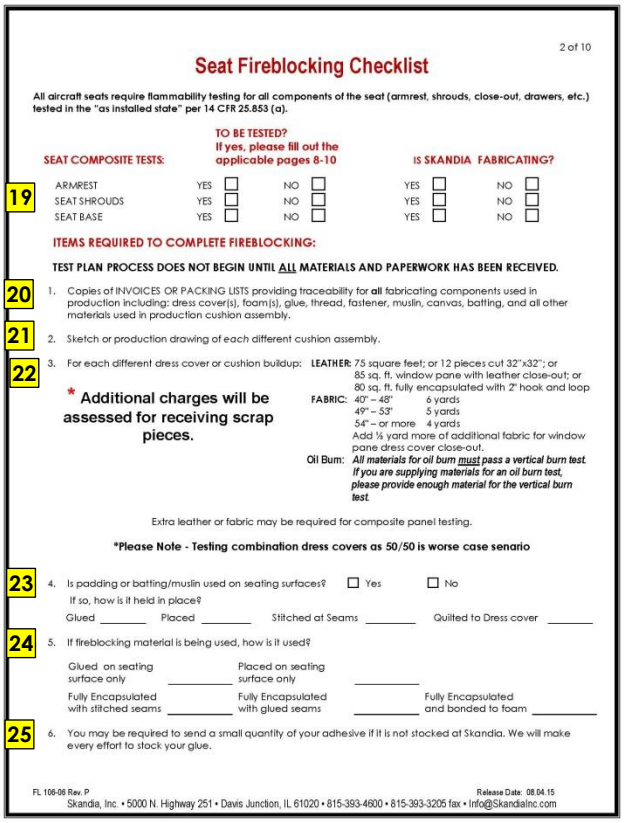
22. Dress cover material is needed for each fireblock test. In some cases, we may have to perform multiple tests with the same dress cover material.

23. We need to know if padding or batting is attached to the dress cover or if you have batting placed between the dress cover and the foam cushion, as well as how it is attached. If this is different for various cushions (seat back, bottom, headrest or legrest) we also need to know this.

24. If a fireblocking material is being used, we need to know how.

25. Skandia may require you to provide us with your adhesive if we are fabricating the burn specimens. Skandia tries to maintain inventory of many common adhesives.

26. This section deals with how the dress cover is closed after it is installed on the foam cushion in order to ensure proper testing.



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Seat Fireblocking Checklist

All aircraft seats require flammability testing for all components of the seat (armrest, shrouds, close-out, drawers, etc.) tested in the "as installed state" per 14 CFR 25.853 (a).

SEAT COMPOSITE TESTS:	TO BE TESTED? If yes, please fill out the applicable pages 8-10		IS SKANDIA FABRICATING?	
ARMREST	YES ☐	NO ☐	YES ☐	NO ☐
SEAT SHROUDS	YES ☐	NO ☐	YES ☐	NO ☐
SEAT BASE	YES ☐	NO ☐	YES ☐	NO ☐

ITEMS REQUIRED TO COMPLETE FIREBLOCKING:

TEST PLAN PROCESS DOES NOT BEGIN UNTIL ALL MATERIALS AND PAPERWORK HAS BEEN RECEIVED.

1. Copies of INVOICES OR PACKING LISTS providing traceability for **all** fabricating components used in production including: dress cover(s), foam(s), glue, thread, fastener, muslin, canvas, batting, and all other materials used in production cushion assembly.
2. Sketch or production drawing of *each* different cushion assembly.
3. For each different dress cover or cushion buildup: **LEATHER:** 75 square feet; or 12 pieces cut 32"x32"; or 85 sq. ft. window pane with leather close-out; or 80 sq. ft. fully encapsulated with 2" hook and loop
   FABRIC: 40" – 48" 6 yards; 49" – 53" 5 yards; 54" – or more 4 yards
   Add ½ yard more of additional fabric for window pane dress cover close-out.
   Oil Burn: ***All materials for oil burn must pass a vertical burn test. If you are supplying materials for an oil burn test, please provide enough material for the vertical burn test.***

* **Additional charges will be assessed for receiving scrap pieces.**

Extra leather or fabric may be required for composite panel testing.

***Please Note - Testing combination dress covers as 50/50 is worse case senario**

4. Is padding or batting/muslin used on seating surfaces? ☐ Yes ☐ No
   If so, how is it held in place?
   Glued _____ Placed _____ Stitched at Seams _____ Quilted to Dress cover _____
5. If fireblocking material is being used, how is it used?
   Glued on seating surface only _____ Placed on seating surface only _____
   Fully Encapsulated with stitched seams _____ Fully Encapsulated with glued seams _____ Fully Encapsulated and bonded to foam _____
6. You may be required to send a small quantity of your adhesive if it is not stocked at Skandia. We will make every effort to stock your glue.

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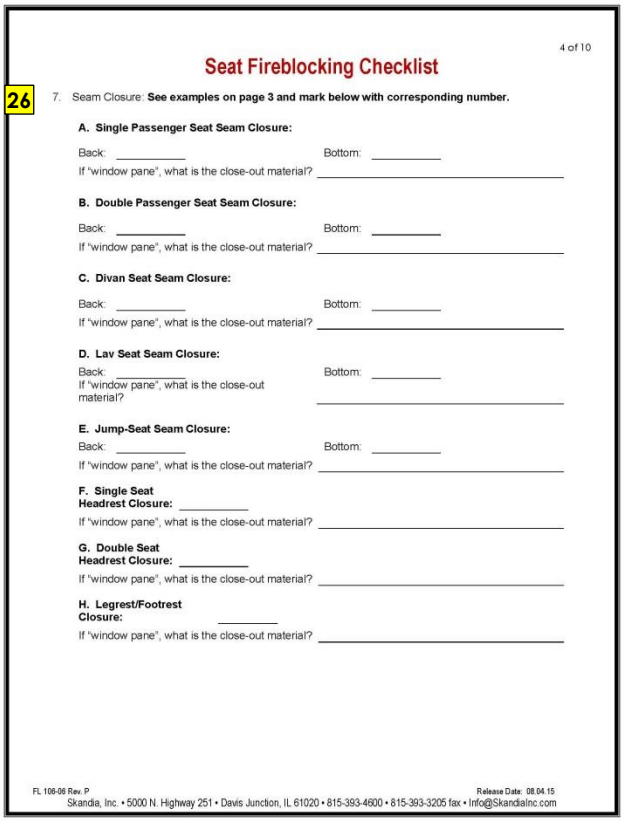

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Seat Fireblocking Checklist

7. Seam Closure: **See examples on page 3 and mark below with corresponding number.**

A. Single Passenger Seat Seam Closure:
Back: _____ Bottom: _____
If "window pane", what is the close-out material? _____

B. Double Passenger Seat Seam Closure:
Back: _____ Bottom: _____
If "window pane", what is the close-out material? _____

C. Divan Seat Seam Closure:
Back: _____ Bottom: _____
If "window pane", what is the close-out material? _____

D. Lav Seat Seam Closure:
Back: _____ Bottom: _____
If "window pane", what is the close-out material? _____

E. Jump-Seat Seam Closure:
Back: _____ Bottom: _____
If "window pane", what is the close-out material? _____

F. Single Seat Headrest Closure: _____
If "window pane", what is the close-out material? _____

G. Double Seat Headrest Closure: _____
If "window pane", what is the close-out material? _____

H. Legrest/Footrest Closure: _____
If "window pane", what is the close-out material? _____

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27. If Skandia is performing flammability testing of armrests and shrouds, we need the same information as required for seat cushions. B/E Aerospace requires that these items are all tested for their 16g seats.

28. Again, invoices or packing lists for each component that comprise the armrests, shrouds, seat base, etc. are required. Some of these items may need to have several tests if different combinations of material are used.

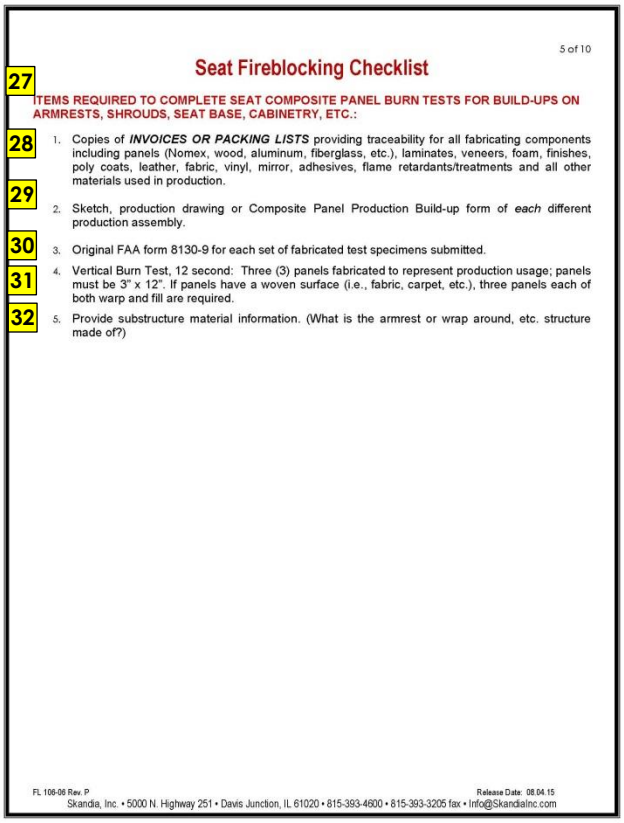
29. As with the seat cushion, we require a production drawing or sketches of each component (armrests, shrouds, etc.).

30. If you are supplying Skandia with fabricated test specimens, we require an original completed FAA Form 8130-9.

31. When performing FAA flammability testing, three samples for each test are needed. However, if the material is woven, we need to burn six (three fabricated with the warp of the material and three with the fill. Warp is up the roll, fill is across the roll.).

32. We need to know what the substructures of the armrest, shrouds, etc. (B/E Aerospace and Decrane Aerospace can provide substrate lists for their seats). When we are testing armrests, shrouds, and seat bases we need to know everything that makes up the component.

33. On this chart please list all materials used and where. Any special notes should be listed in the comment area.



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Seat Fireblocking Checklist

27

ITEMS REQUIRED TO COMPLETE SEAT COMPOSITE PANEL BURN TESTS FOR BUILD-UPS ON ARMRESTS, SHROUDS, SEAT BASE, CABINETRY, ETC.:

28 1. Copies of ***INVOICES OR PACKING LISTS*** providing traceability for all fabricating components including panels (Nomex, wood, aluminum, fiberglass, etc.), laminates, veneers, foam, finishes, poly coats, leather, fabric, vinyl, mirror, adhesives, flame retardants/treatments and all other materials used in production.

29 2. Sketch, production drawing or Composite Panel Production Build-up form of *each* different production assembly.

30 3. Original FAA form 8130-9 for each set of fabricated test specimens submitted.

31 4. Vertical Burn Test, 12 second: Three (3) panels fabricated to represent production usage; panels must be 3" x 12". If panels have a woven surface (i.e., fabric, carpet, etc.), three panels each of both warp and fill are required.

32 5. Provide substructure material information. (What is the armrest or wrap around, etc. structure made of?)

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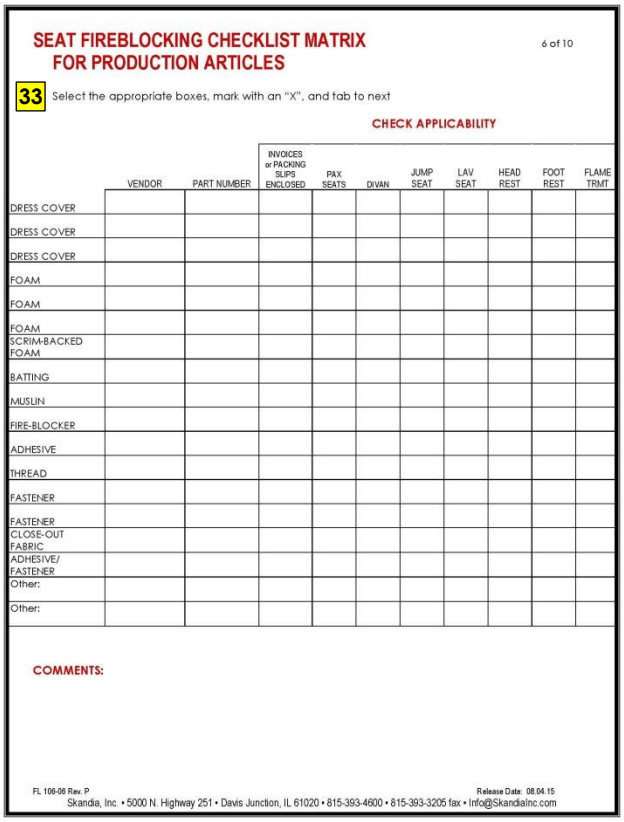

SEAT FIREBLOCKING CHECKLIST MATRIX FOR PRODUCTION ARTICLES

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33 Select the appropriate boxes, mark with an "X", and tab to next

CHECK APPLICABILITY

	VENDOR	PART NUMBER	INVOICES or PACKING SLIPS ENCLOSED	PAX SEATS	DIVAN	JUMP SEAT	LAV SEAT	HEAD REST	FOOT REST	FLAME TRMT
DRESS COVER										
DRESS COVER										
DRESS COVER										
FOAM										
FOAM										
FOAM										
SCRIM-BACKED FOAM										
BATTING										
MUSLIN										
FIRE-BLOCKER										
ADHESIVE										
THREAD										
FASTENER										
FASTENER										
CLOSE-OUT FABRIC										
ADHESIVE/ FASTENER										
Other:										
Other:										

COMMENTS:

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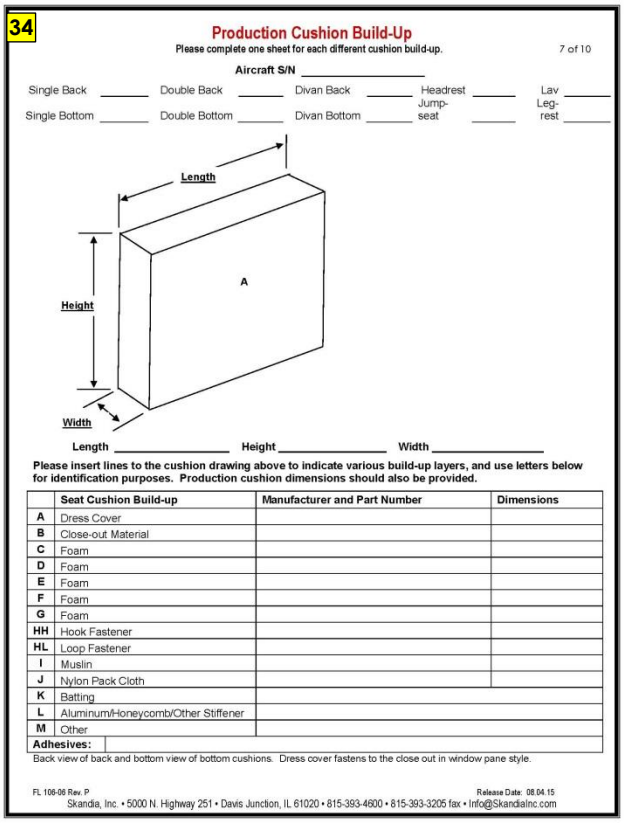
34. This is a simplified sketch that you may use if you do not have production drawings or sketches. If you use this template, please identify on the drawing the various layers of materials utilized and identify them in the table below. One of these would be needed for each cushion (back, bottom, headrest, legrest) for all seats, divans, lavs, and jumpseats.



34

Production Cushion Build-Up

Please complete one sheet for each different cushion build-up. 7 of 10

Aircraft S/N _____

Single Back _____ Double Back _____ Divan Back _____ Headrest _____ Lav _____

Single Bottom _____ Double Bottom _____ Divan Bottom _____ Jump-seat _____ Leg-rest _____

Length _____ Height _____ Width _____

Please insert lines to the cushion drawing above to indicate various build-up layers, and use letters below for identification purposes. Production cushion dimensions should also be provided.

	Seat Cushion Build-up	Manufacturer and Part Number	Dimensions
A	Dress Cover		
B	Close-out Material		
C	Foam		
D	Foam		
E	Foam		
F	Foam		
G	Foam		
HH	Hook Fastener		
HL	Loop Fastener		
I	Muslin		
J	Nylon Pack Cloth		
K	Batting		
L	Aluminum/Honeycomb/Other Stiffener		
M	Other		
Adhesives:			

Back view of back and bottom view of bottom cushions. Dress cover fastens to the close out in window pane style.

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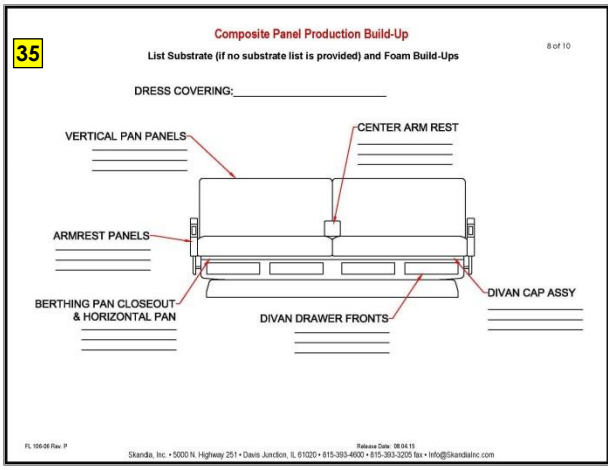
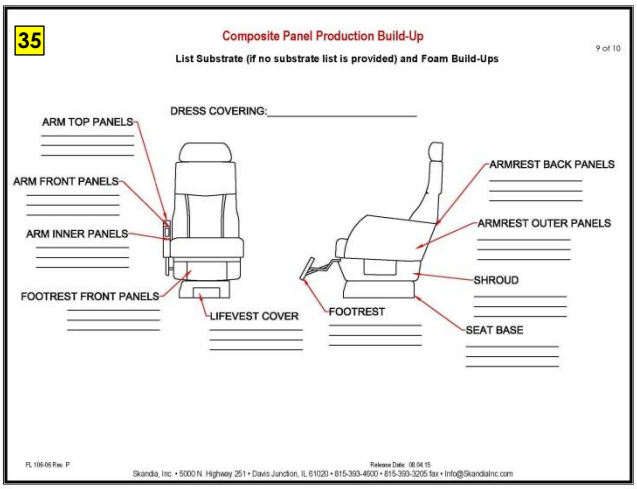
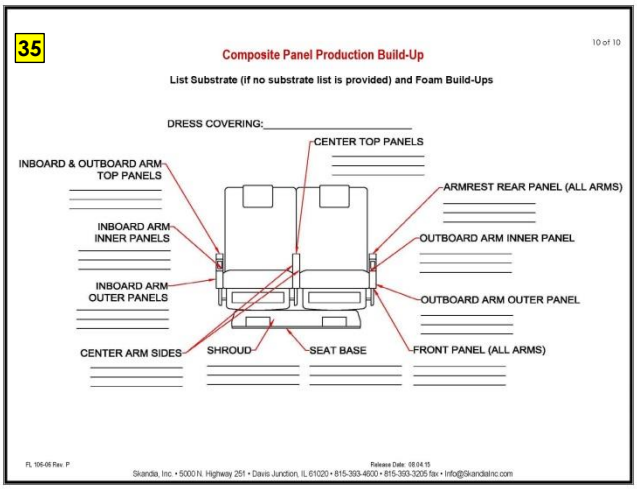
35. This information is the same as required for the cushion drawing and needs to be completed for each component armrest, seat shroud, seat base, etc. Some components may require several tests for one armrest; in many cases there are different build-ups or the substrate will change the combination. For example; in armrests there are frequently different build-ups or changes in the substrate that will require multiple tests.







16G REPLACEMENT DRESS COVER FIRE-BLOCKING CHECKLIST

The following is Skandia's 16g Dress Cover Replacement Checklist and details of how to complete it. All this information is important to the development of the Certification and Flammability Test Plan. Please take the time to review each section as you are completing the checklist to be able to give Skandia the most complete and accurate information.

1. Company Name requesting the work.

2. Contact Name: Point of contact.

3-5. Phone/Fax/Email to contact #2.

6. A/C Completion Date: The date the aircraft is to be delivered.

7. PO#: Purchase Order that Skandia is to reference for this work.

8. Aircraft Make: Enter the aircraft make as listed on the type certificate data sheet.

9. Aircraft Model: Enter either the aircraft model series or the specific aircraft model number, as appropriate and as listed on the type certificate data sheet.

10. S/N#: Aircraft serial number.

11. Tail#: The registration number of the aircraft. (If the aircraft is not United States Registered or United States State of Design, an 8110-3 cannot be issued unless it is an FAA project).

12. If Skandia is fabricating the test specimens, an FAA Form 8130-9 will need to be issued and signed. Authorization from you, the customer, will allow Skandia to sign the Statement of Conformity on your behalf.

13. Skandia must know if Test Data is in support of AC 21-25A TSO Modification.

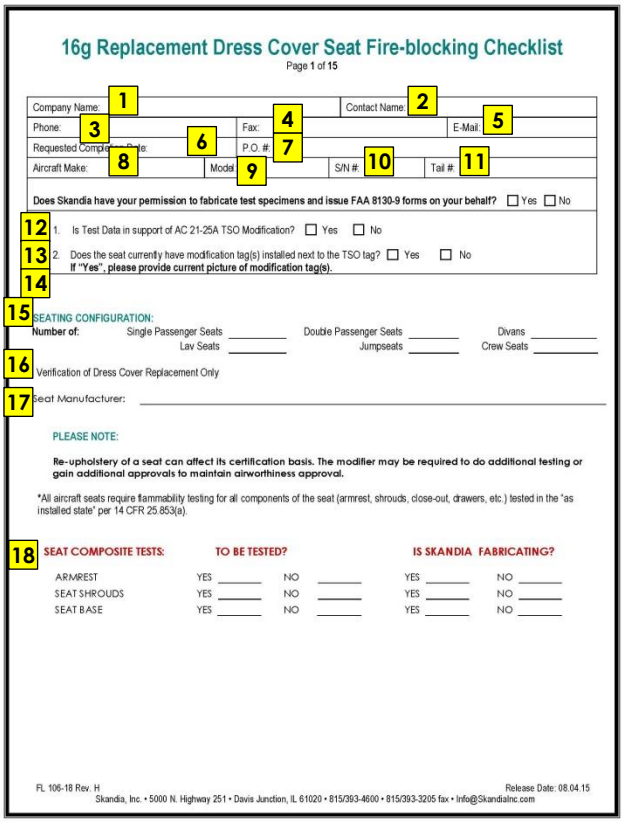
14. Are there existing modification tags on the seats next to the original tags? This will let Skandia know if the original seats have been modified.

15. Skandia needs to know how many seats/divans/lavs/jumpseats are being produced for inclusion in this test plan. Depending on your aircraft, all or some of your seats may be 16g.

16. Skandia must have verification that this is for dress cover change only.

17. Please list the seat manufacturer as this helps to better understand what testing may be required.

18. All components of a seat must also meet the requirements of 14 CFR 25.853 (a)(ii) 12-second vertical burn test as a composite representing the actual build-up. Skandia can perform this additional testing.



16g Replacement Dress Cover Seat Fire-blocking Checklist

Page 1 of 15

Company Name: 1 | Contact Name: 2

Phone: 3 | Fax: 4 | E-Mail: 5

Requested Completion Date: 6 | P.O. #: 7

Aircraft Make: 8 | Model: 9 | S/N #: 10 | Tail #: 11

Does Skandia have your permission to fabricate test specimens and issue FAA 8130-9 forms on your behalf? ☐ Yes ☐ No

12 1. Is Test Data in support of AC 21-25A TSO Modification? ☐ Yes ☐ No

13 2. Does the seat currently have modification tag(s) installed next to the TSO tag? ☐ Yes ☐ No
If "Yes", please provide current picture of modification tag(s).

14

15 SEATING CONFIGURATION:
Number of: Single Passenger Seats _____ Double Passenger Seats _____ Divans _____
Lav Seats _____ Jumpseats _____ Crew Seats _____

16 Verification of Dress Cover Replacement Only

17 Seat Manufacturer: _____

PLEASE NOTE:

Re-upholstery of a seat can affect its certification basis. The modifier may be required to do additional testing or gain additional approvals to maintain airworthiness approval.

*All aircraft seats require flammability testing for all components of the seat (armrest, shrouds, close-out, drawers, etc.) tested in the "as installed state" per 14 CFR 25.853(a).

18 SEAT COMPOSITE TESTS: | TO BE TESTED? | IS SKANDIA FABRICATING?

	TO BE TESTED?		IS SKANDIA FABRICATING?	
ARMREST	YES _____	NO _____	YES _____	NO _____
SEAT SHROUDS	YES _____	NO _____	YES _____	NO _____
SEAT BASE	YES _____	NO _____	YES _____	NO _____

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19. You must list all of the seat model numbers and serial numbers. This information can be found on the seat data tag.

20. Copies of all packing lists or invoices are required for each material used within the seat upholstery. Without traceability, conformity cannot be performed and the test specimens will not be burned.

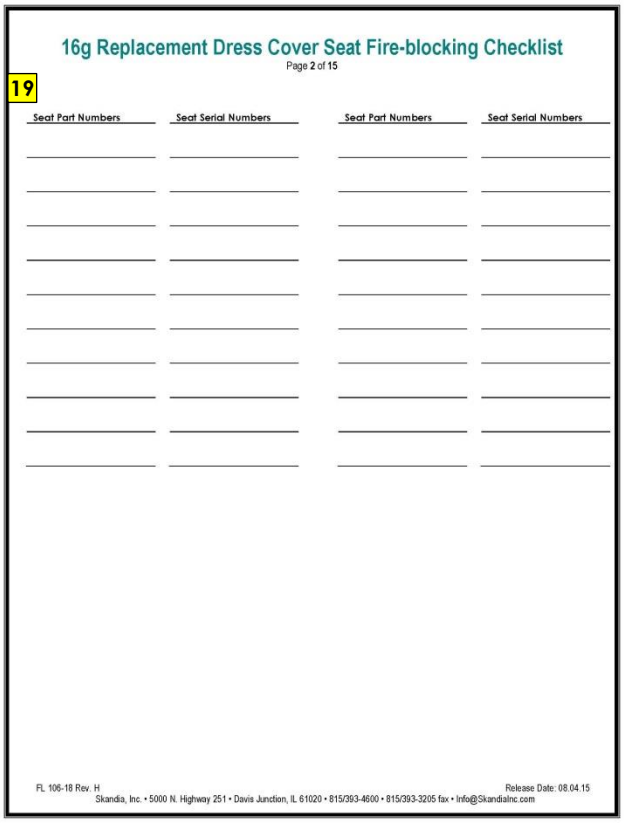
21. Skandia requires that pictures be taken to verify all cushion build-ups, including back, bottom, headrest and legrest. This information, along with the information you provide on pages 6-9 will be the basis for verification of existing materials. Please make special note of hook and loop tape placement as stated on the checklist.

22. Dress cover material is needed for each fireblock test. In some cases, Skandia may have to perform multiple tests with the same dress cover material.

23. We need to know if padding or batting is attached to the dress cover. It is permissible to add up to 0.25" of padding to allow for a padded dress cover. We need to know if the padding or batting is attached to the dress cover or if it is placed between the dress cover and the foam cushion, as well as, how it is attached. If this is different for various cushions (seat back, bottom, headrest or legrest) we also need to know this information.

24. If a fireblocking material is being used, we need to know how it is used in the build-up.

25. If you have a copy of the original report or copies of the original production drawings, Skandia will require you to provide this information. Please list the original foam assembly drawing numbers in the table provided.



16g Replacement Dress Cover Seat Fire-blocking Checklist

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Seat Part Numbers	Seat Serial Numbers	Seat Part Numbers	Seat Serial Numbers

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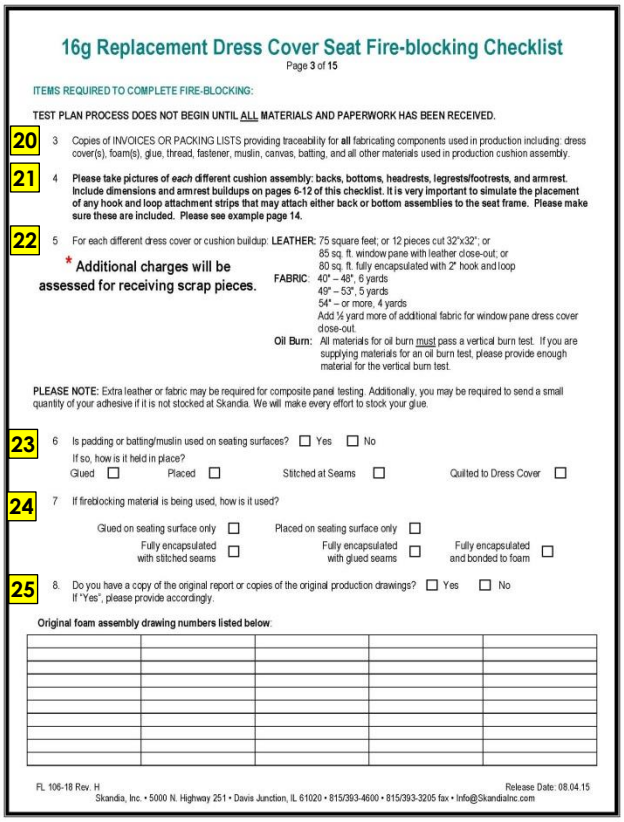

16g Replacement Dress Cover Seat Fire-blocking Checklist

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ITEMS REQUIRED TO COMPLETE FIRE-BLOCKING:

TEST PLAN PROCESS DOES NOT BEGIN UNTIL ALL MATERIALS AND PAPERWORK HAS BEEN RECEIVED.

20 3 Copies of INVOICES OR PACKING LISTS providing traceability for **all** fabricating components used in production including: dress cover(s), foam(s), glue, thread, fastener, muslin, canvas, batting, and all other materials used in production cushion assembly.

21 4 **Please take pictures of *each* different cushion assembly: backs, bottoms, headrests, legrests/footrests, and armrest. Include dimensions and armrest buildups on pages 6-12 of this checklist. It is very important to simulate the placement of any hook and loop attachment strips that may attach either back or bottom assemblies to the seat frame. Please make sure these are included. Please see example page 14.**

22 5 For each different dress cover or cushion buildup: **LEATHER:** 75 square feet; or 12 pieces cut 32"x32"; or 85 sq. ft. window pane with leather close-out, or 80 sq. ft. fully encapsulated with 2" hook and loop

* Additional charges will be assessed for receiving scrap pieces.

FABRIC: 40" – 48", 6 yards
49" – 53", 5 yards
54" – or more, 4 yards
Add ½ yard more of additional fabric for window pane dress cover close-out.

Oil Burn: All materials for oil burn must pass a vertical burn test. If you are supplying materials for an oil burn test, please provide enough material for the vertical burn test.

PLEASE NOTE: Extra leather or fabric may be required for composite panel testing. Additionally, you may be required to send a small quantity of your adhesive if it is not stocked at Skandia. We will make every effort to stock your glue.

23 6 Is padding or batting/muslin used on seating surfaces? ☐ Yes ☐ No
If so, how is it held in place?
Glued ☐ Placed ☐ Stitched at Seams ☐ Quilted to Dress Cover ☐

24 7 If fireblocking material is being used, how is it used?
Glued on seating surface only ☐ Placed on seating surface only ☐
Fully encapsulated with stitched seams ☐ Fully encapsulated with glued seams ☐ Fully encapsulated and bonded to foam ☐

25 8. Do you have a copy of the original report or copies of the original production drawings? ☐ Yes ☐ No
If "Yes", please provide accordingly.

Original foam assembly drawing numbers listed below:

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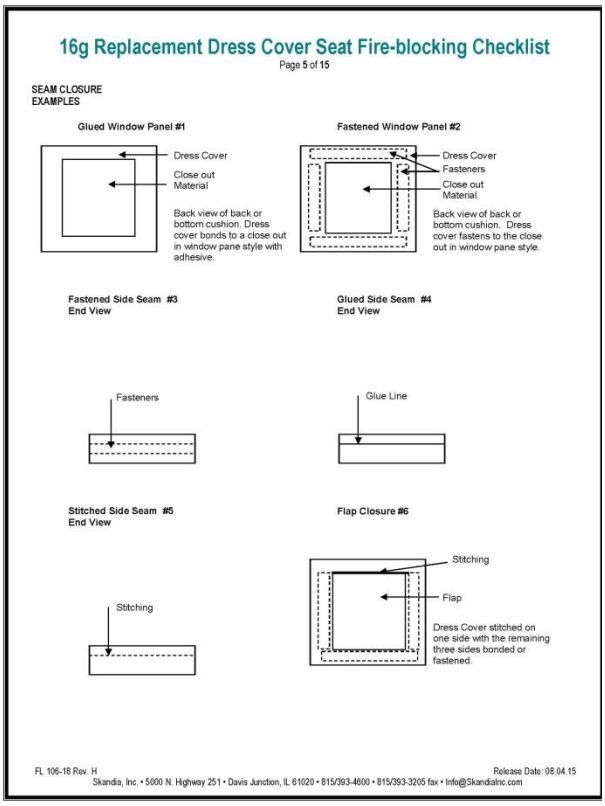
26. On page 4, Skandia has listed various types of seam closures, please list the number of seam closure on page 4 to the corresponding description. Example: If the single back cushion has a fully encapsulated back cushion and hook and loop for a final seam closure, please put #3 next to the Single Back.



16g Replacement Dress Cover Seat Fire-blocking Checklist

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SEAM CLOSURE EXAMPLES

Glued Window Panel #1

Fastened Window Panel #2

Fastened Side Seam #3
End View

Glued Side Seam #4
End View

Stitched Side Seam #5
End View

Flap Closure #6

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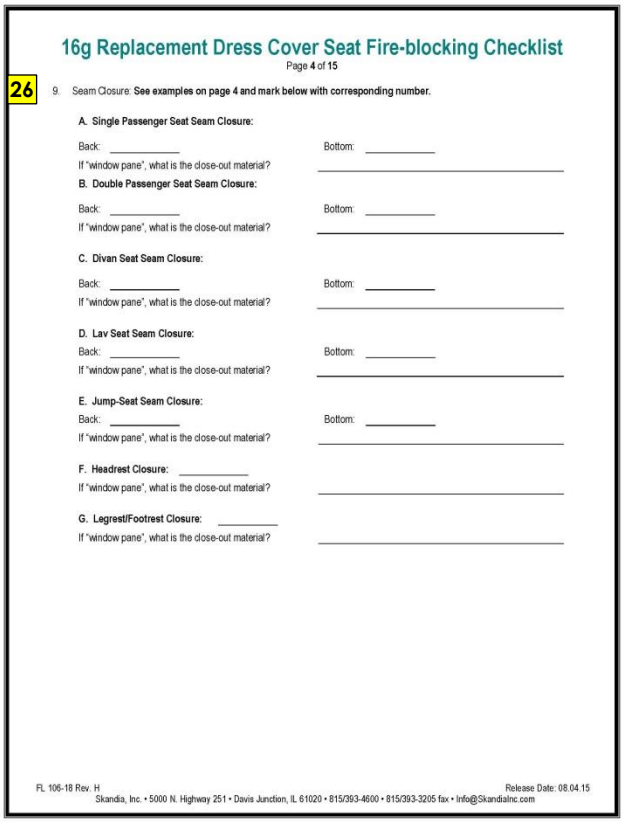

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9. Seam Closure: **See examples on page 4 and mark below with corresponding number.**

A. Single Passenger Seat Seam Closure:

Back: _____ Bottom: _____

If "window pane", what is the close-out material? _____

B. Double Passenger Seat Seam Closure:

Back: _____ Bottom: _____

If "window pane", what is the close-out material? _____

C. Divan Seat Seam Closure:

Back: _____ Bottom: _____

If "window pane", what is the close-out material? _____

D. Lav Seat Seam Closure:

Back: _____ Bottom: _____

If "window pane", what is the close-out material? _____

E. Jump-Seat Seam Closure:

Back: _____ Bottom: _____

If "window pane", what is the close-out material? _____

F. Headrest Closure: _____

If "window pane", what is the close-out material? _____

G. Legrest/Footrest Closure: _____

If "window pane", what is the close-out material? _____

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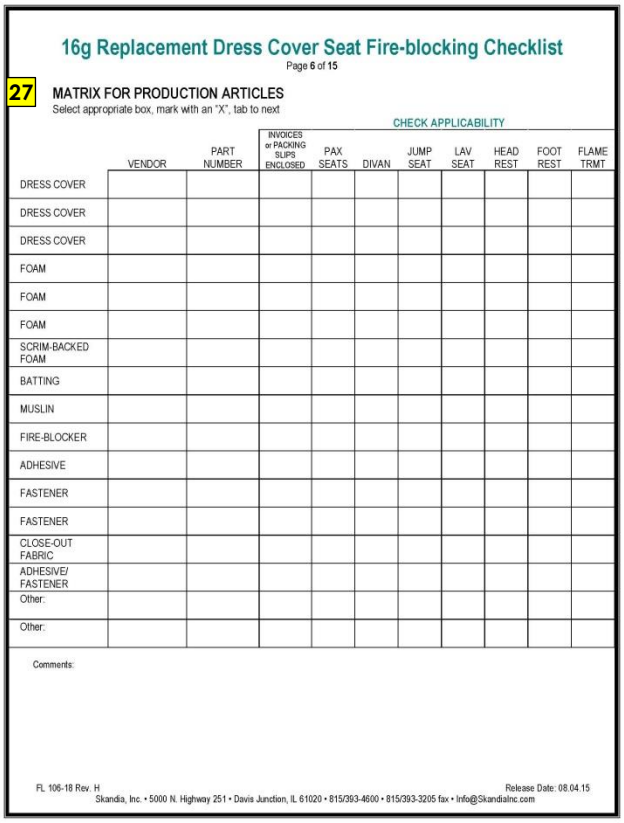
27. On this chart, please list all materials used and where. Any special notes should be listed in the comment area.



16g Replacement Dress Cover Seat Fire-blocking Checklist

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27 MATRIX FOR PRODUCTION ARTICLES

Select appropriate box, mark with an "X", tab to next

CHECK APPLICABILITY

	VENDOR	PART NUMBER	INVOICES or PACKING SLIPS ENCLOSED	PAX SEATS	DIVAN	JUMP SEAT	LAV SEAT	HEAD REST	FOOT REST	FLAME TRMT
DRESS COVER										
DRESS COVER										
DRESS COVER										
FOAM										
FOAM										
FOAM										
SCRIM-BACKED FOAM										
BATTING										
MUSLIN										
FIRE-BLOCKER										
ADHESIVE										
FASTENER										
FASTENER										
CLOSE-OUT FABRIC										
ADHESIVE/ FASTENER										
Other:										
Other:										

Comments:

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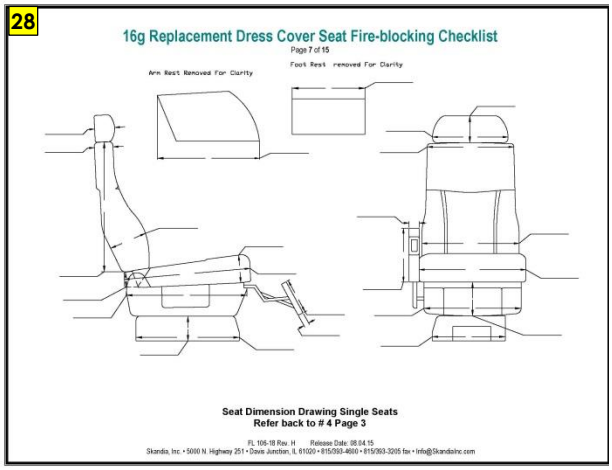
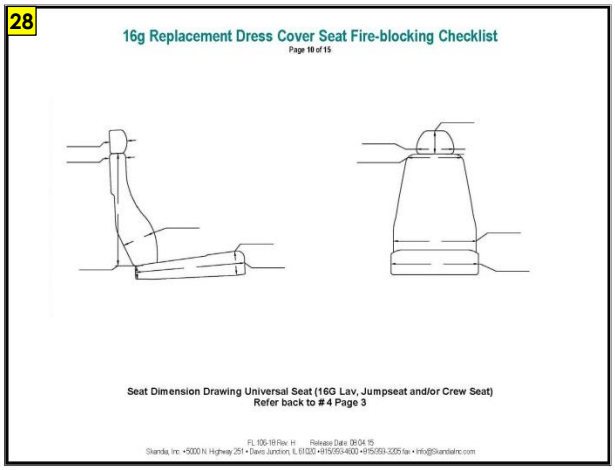
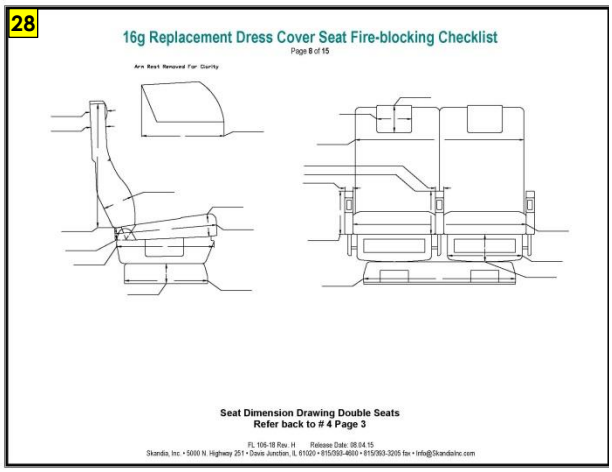
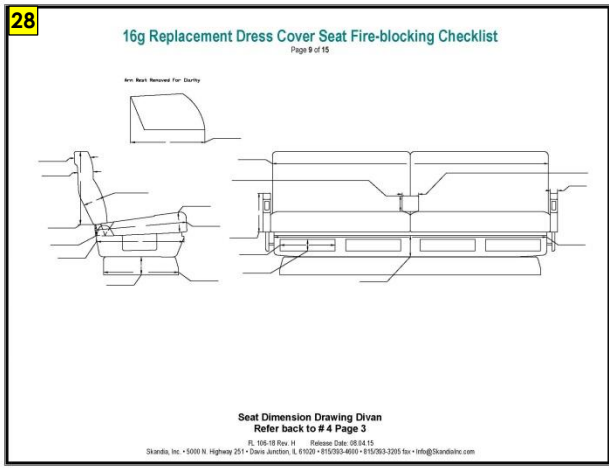
28. On pages 7-10 you will list all of the dimensions of the finished cushion assemblies. It is very important to complete the entire page.

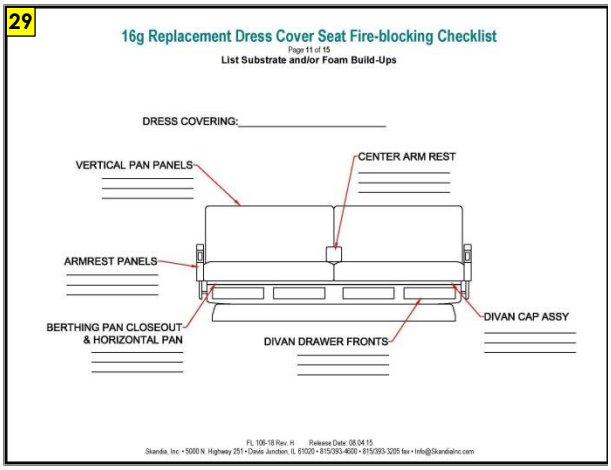


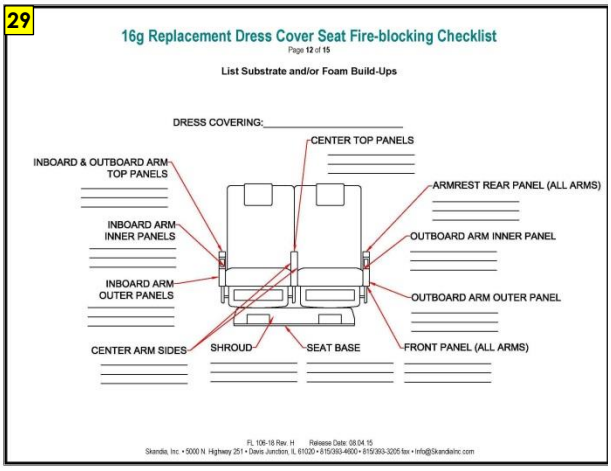


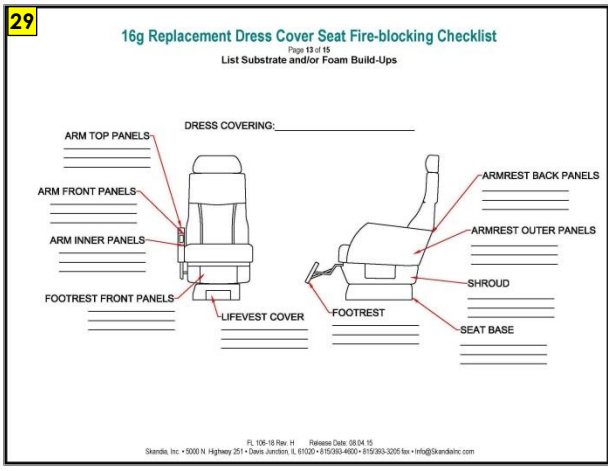




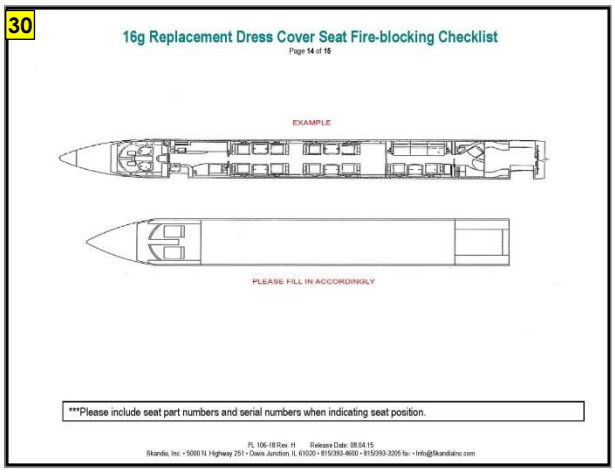
29. On pages 11-13 list all build-ups for the armrest and include any substrate information. It may be permissible to refoam armrests, seat bases and seat shrouds, if needed.



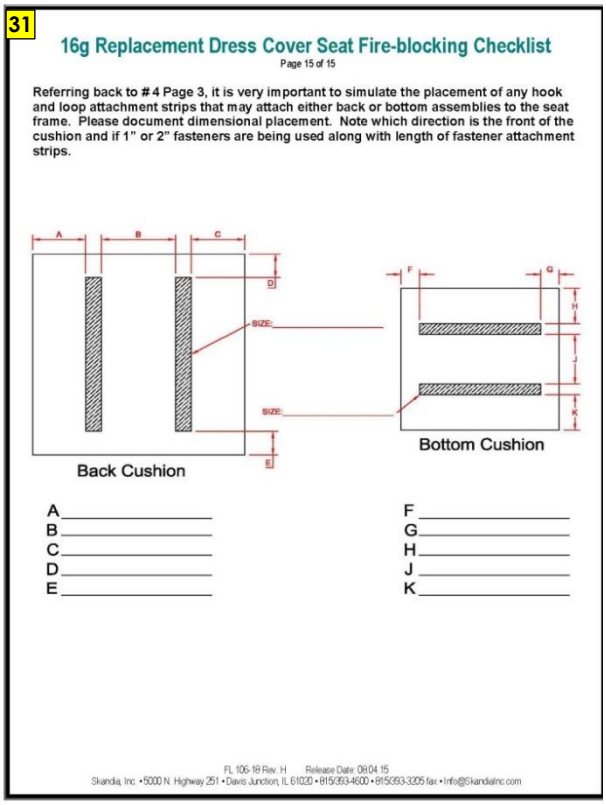




30. On page14 indicate each seating location. List seat part numbers and serial numbers for each seat.



31. Page 15 is an example of how hook and loop attach strips may be shown. It is a requirement that this be an accurate representation of the production articles. Since these attach strips are examples, it may be more accurate to submit your own sketch with dimensions.



31

16g Replacement Dress Cover Seat Fire-blocking Checklist

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Referring back to #4 Page 3, it is very important to simulate the placement of any hook and loop attachment strips that may attach either back or bottom assemblies to the seat frame. Please document dimensional placement. Note which direction is the front of the cushion and if 1" or 2" fasteners are being used along with length of fastener attachment strips.

A _____
B _____
C _____
D _____
E _____

F _____
G _____
H _____
J _____
K _____

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SKANDIA

Making Aircraft Quieter, Safer and More Comfortable.

May 25, 2006

FAA Memorandum on Issuing FAA Form 8110-3 for Flammability

Effective today Skandia has been directed by our FAA, the Aircraft Certification Office that we will need to comply with FAA Memorandum PS-AIR100-3-31-05, subject: Action: Designated Engineering Representative (DER) Approval of Flammability Data.

What this means is that Skandia will no longer be able to issue FAA form 8110-3 for flammability data on single element materials. (foam, batting, vinyl, fireblockers, treated dress cover materials, leather, etc.) FAA form 8110-3 will only be issued for materials in the as installed state in the aircraft per PS-AIR100-3. Example being cabin side wall with nomex panel, foam, leather we would need to test this as an assemble, either with a test plan or through our Streamlined Test.

Skandia will be able to issue Skandia Flammability Data Sheets and on products that we sell or treat we can also issue Certificate of Conformance.

FAA Action Memorandum PS-AIR100-3-31-05 is attached and can be viewed at: www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgPolicy.nsf/0/CDFF156E673E096B86256FEE006B81D8?OpenDocument

Regards,
Gary K. Palmer
President

SKANDIA

FOAM FABRICATION PROGRAMS

Utilizing Latest Technologies

Skandia is equipped with the latest and most advanced CNC equipment to hold tight tolerances and results in highly repeatable products.

Speed, repeatability and precision are based on advanced manufacturing practices to provide consistent, uniform seat cushion production.

From small, simple components to large volume seating programs, Skandia's Fabrication team can meet your needs efficiently and cost-effectively.

CNC capabilities to precision cut components combine to produce dimensionally accurate cushions in high volume production quantities.

Qualifications

FAA Certified Repair Station

FAA TSA C72c Authorization

FAA 8110-3 Flammability Certification

In-House Team of DERs + DARs

Approved OEM Supplier Status

Cost Effective Solution

ELIMINATE

Purchasing, Receiving and Warehousing of Sheet Stock, In-House Hand Building

REDUCE

Shipping Costs, Labor and Sheet Stock Waste (estimated at 25%)

STREAMLINE

Flammability Testing and Certification Process, including Fireblocking; Free-up Manufacturing Space

EXPERIENCE

Skandia supports many fabrication programs for major OEMs and airlines. Contact our Fabrication Manager for more information.

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Special Programs

CUSTOM ORDERS – OUR SPECIALTY

Skandia's expert engineers and fabricators can design and build custom seats to suit your needs. From 30 seats to 30 aircraft, our CNC machine capabilities coupled with precision cut components produce comfortable cushions to meet your completion schedule.

INTERIOR SPECIALTIES

- Turn-Key Upholstery
- Cut & Sew
- Lamination
- Parts Kitting

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